The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 339.—Vol. XII.] LONDON: SATURDAY, FEBRUARY 19, 1842. [Price 6d.

LEAD MINE ON SALE.—TO BE SOLD, BY AUCTION, at the White Horse Hotel, Holywell, on Wednesday, the 2d day of March next, at Four o'clock in the afternoon, subject to such conditions of sale as shall be then agreed upon, all that very valuable and well-known lead mine, called the HOLYWELL LEVEL MINE, situated near to the town of Holywell, and comprising an almost unlimited extent of mineral land. The mine has been worked by means of an adit level, which has been driven nearly a mile in length, and drains to the depth of seventy yards. There is a steam-engine on the mine, used for pumping and winding, and in excellent repair. Very few trials have been made below level, and as little doubt exists in the minds of the most experienced miners of there being abundance of ore under the present workings. The profits, for many years, averaged from £7000 to £10,000 per annum. The lands are held under leases from Sir P. Mostyn, Bart., the late D. Pennant, Esq., E. W. Grainger, Esq., and others, for the term of twenty-one years, and at the usual royalties.

For further particulars apply (if by letter, post paid) to Mr. Samuel Williams, Pendre, Holywell, Flintshire. 1

VALUABLE MINERAL PROPERTY IN CUMBERLAND.—TO BE SOLD, or LET, the LEASE of the MANOR of BRAITHWAITE and COLEDALE, situated in the county of Cumberland, and held under the Earl of Egremont; several LEAD and COPPER MINES having been already opened, and at present in working order—one of which is now yielding good ore—but on account of the distance from the residence, and also the business of the advertiser, he is anxious to sell the lease (which was taken for twenty one years, six of which are yet unexpired), and to any company or individual purchasing, with an intention to prosecute the search for ore, the advertiser can warrant the renewal of the lease.

For further particulars, apply to Mr. John Tebay, plumber, Whitehaven.

N.B.—A pair of Blast Cylinders and Smelting Apparatus to dispose of, apply to the advertiser. 2

COAL, IRONSTONE, AND LIMESTONE.—TO BE LET, 1. A field of several thousand acres of IRONSTONE and GREAT MOUNTAIN LIMESTONE, of first-rate quality, lying contiguous to each other, with several seams of COAL, producing the best coke in the immediate vicinity—all within the manor of Wolsingham, in the county of Durham, and having railway communication to the sea.—2. A field of several hundred acres of COAL, in the manor of Seaton Carew, in the county of Durham, intersected by the Stockton and Hartlepool Railway, and distant within three miles from the port of Hartlepool. The recent winnings of coal in the near neighbourhood have established the existence of the main seams of the Durham coal field at workable depths.

For further particulars inquire of G. H. Wilkinson, Esq., Harperley-park, Bishop Auckland. 3

TO BE SOLD, THE KEXBROUGH COLLIERY, situate four miles from Barnsley, Yorkshire, and near to the Barnsley Canal, by which, and two competing lines of canal, the Aire and Calder, or the Dearne and Dove, with the River Don, it is connected easily and cheaply with the port of Goole, and thence with the coasts of Lincolnshire, Norfolk, Suffolk, Kent, and Sussex, and the port of London. The works and machinery are entirely new, and of the most substantial character, and comprise three pits, with new pumping-engine of great power, winding-engine, railway engine, railways, staiths, basin, carpenters' and smiths' shops, &c. The colliery is in good working condition, and, with a moderate outlay, is capable of raising not less than 100,000 tons annually. The Parkgate coal, which is won at the depth of 140 yards, is 4 ft. 8 in. thick, and a good house fire coal. It is also well adapted for smelting iron, for which purpose it is used in the neighbourhood. The Tankersley ironstone, a well known mine, and the Flockton thick bed of coal, are also won by the engine-pit, and might be worked at the depth of fifty yards. The lease has thirty-five years unexpired to run, and comprehends the coal under more than 700 acres, with an additional field if necessary. The colliery has been recently surveyed by an eminent colliery viewer, whose report may be seen. The coal has been tried and approved in London.

For further particulars, or to treat for the purchase, apply to John Brakenridge, Esq., Bretton Lodge, Wakefield; to Mr. Embleton, colliery viewer, Middleton, near Leeds; or to Messrs. Payne, Eddison, and Ford, solicitors, Leeds; and to view to Mr. Timothy Marshall, Darton, Barnsley. 4

BALLESWIDDEN MINE, St. Just, Cornwall.—In consequence of the outlay in this mine being larger than was calculated on, it has been determined to increase the number of shares from Eighty-seven to One Hundred and Forty-five. Of these additional shares, eighteen will be held by some of the present adventurers, but as a considerable portion of the mine is held by trustees who do not consider themselves authorised to extend their adventure, it has been resolved to offer FOR SALE, by PRIVATE CONTRACT, FORTY 145th-SHARES in this very productive and highly promising mine. Balleswidden is worked on an inexhaustible lode; is producing upwards of fifty tons of tin per month and is capable of yielding a much larger quantity. There are on the mine—one draft engine, two steam whims, two steam stamps, working 144 heads, two large water-wheels, working thirty six stampheads, six horse whims, and every requisite machinery for effectually and profitably working the mine. The present is a most eligible opportunity for the investment of capital, as the mine is in full course of working, and realising a handsome profit.

Plans and sections of the mine may be seen, and every information obtained, at Messrs. T. and W. Bolitho's, 26, Fenchurch street, London, to whom application for shares may also be made; at the counting-house of Mr. R. V. Davy, the purser, Penzance; or to the captains on the mine.

Balleswidden Mine, St. Just, Jan. 25. 5

WHEAL ANN TIN MINE, in the parish of Wendron, Cornwall.—All persons claiming any shares, estate, or interest, in the above-mentioned mine, are requested to send the particulars of their respective claims, pre-paid, to Captain William Richards, Redruth, Cornwall, on or before the 21st of February instant; in default thereof, they will be deemed to have relinquished and abandoned all their respective shares and interest in the said mine, and the setts or licenses under which the said mine is, or lately was, worked and carried on, will be forthwith surrendered and yielded up to the grantors thereof.

February 1. 6

SIMS'S IMPROVED STEAM-ENGINE.—Mr. JAMES SIMS (engineer, of Redruth, in the county of Cornwall,) begs to inform miners, manufacturers, steam-packet companies, &c., that having, by several experiments, now at work in Cornwall, proved the GREAT SAVING OF FUEL EFFECTED, and the great ADDITIONAL POWER OBTAINED, by his PATENT IMPROVED STEAM-ENGINE, is ready to engage for the manufacture of them on the following terms:—

An engine of 10 feet stroke, equal to the power of an 80-inch cylinder Boulton and Watt single power pumping-engine, with boilers, and every metallic part complete	£2800	0	0
Equal to the power of a 70-inch cylinder, 10 feet stroke, with boilers, &c., as above	2100	0	0
Equal to the power of a 60-inch, &c., as above	1700	0	0
— — 50-inch, —	1400	0	0
— — 40-inch, —	1150	0	0
— — 30-inch, —	800	0	0

ROTARY-ENGINES.

From 10 to 20-horse power, from £28 to £26 per horse-power.

— 20 to 30	— — 26 to 24	—
— 30 to 40	— — 24 to 22	—
— 40 to 50	— — 22 to 20	—

The above prices are for mining and manufacturing purposes—marine engines would be more expensive. Mr. Sims will also engage to alter single power pumping engines, and will, by the alteration, engage, under a heavy penalty, to increase the power 100 per cent., without an increased consumption of fuel. And he will also further engage to alter double power Boulton and Watt engines, whether working rotary or reciprocally, and save one half of the fuel. Engines on the improved plan may be seen at work at the undermentioned places any day [illegible] [illegible] 7

THE LITERARY GAZETTE, No. 1302, Jan. 1, 1842: Double [illegible] 8

TO COLLIERY OWNERS, &c.—WANTED, a situation as VIEWER and ENGINEER, by a young man, who is well acquainted with every branch of the business, having served a regular apprenticeship at one of the principal collieries on the Wear. Excellent testimonials to ability, &c., may be had, if required; letters addressed to "A. G.," Post-office, Newcastle, will be met with immediate attention. 9

TO THE OWNERS OF IRON-WORKS, COLLIERIES, &c. A Person, who has had considerable experience in the erection and management of blast-furnaces and the engineering department of an iron-work and collieries, is desirous of obtaining a situation; he can be well recommended by his present employers for respectability of character and ability as an engineer. Communications addressed "A. E.," 7, Herald office, Glasgow, will be attended to. 10

TO IRONMASTERS, COLLIERY PROPRIETORS, AND MINING SPECULATORS.—WANTED, a situation, by a person of many years' experience in an iron and coal works, who is capable of furnace managing, directing, and conducting, the mineral department, surveying generally, and mapping the mineral workings, and keeping the accounts generally; satisfactory testimonials will be given.—Address (post paid) "A. Z.," Post-office, Bridgend, Glamorganshire, will be met with immediate attention. 11

TO RAILWAY DIRECTORS AND CONTRACTORS.—A gentleman, who has had considerable experience in the construction of railways, wishes an engagement, as traffic manager, or engineer, on a line of railway; he has a good knowledge of masonry, and all kinds of work connected with the construction and upholding of railways, and would have no objection to engage with any respectable contractor, as engineer, or general manager; ample testimonials of character and ability can be given from the directors by whom he has been employed.—Letters, or applications, addressed "A. B.," at Messrs. Harthill and Co., news agents, Waterloo-place, Edinburgh, will be attended to. 12

ALLIANCE GAS COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of proprietors of the Alliance Gas Company will be held at the company's office, 30, Finsbury-circus, London, on Friday, the 4th day of March next, at Two o'clock precisely, when two directors will be declared, in lieu of two who retire by rotation, but who are re-eligible.

By order of the board,

30, Finsbury circus, London, Feb. 11. J. B. GREAVES. 13

COPIAPO MINING COMPANY.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the shareholders of this company will be held at their office, 22, Austinfriars, on Thursday, the 24th instant, at One o'clock precisely; and notice is further given, that such MEETING will be made SPECIAL, for the purpose of filling up two vacancies which have occurred in the direction of the said company. Any shareholder desirous of offering himself a candidate for the direction is requested to send notice of such intention to the secretary, at the company's office, on or before the 19th inst.

By order of the directors,

22, Austinfriars, Feb. 7. FRED. GRELLET, Sec. 14

DANESCOMBE COPPER MINING COMPANY.—Notice is hereby given, that a CALL of TEN SHILLINGS per share was this day made by the directors on the shareholders of the above mine, to be paid on or before the 8th day of March next, at this office.

26, Birchin lane, London, Feb. 2. 15

NORTHERN COAL MINING COMPANY.—Notice is hereby given, that a CALL of TWO POUNDS per share was this day made by the directors, and payment thereof is required to be made, on or before the 28th day of March next, at either the Newcastle-upon-Tyne Joint-Stock Bank, Newcastle-upon-Tyne, the East of England Bank, Norwich, Yarmouth, and Ipswich; or the London and Westminster Joint-Stock Bank, London.

Queen-street, Norwich, Feb. 3. 16

REETH CONSOLIDATED MINING COMPANY.—SIXTH CALL.—The directors of the Reeth Consolidated Mining Company hereby give notice, that they have this day made a CALL of SEVEN SHILLINGS and SIXPENCE per share upon the shares of this company, and the proprietors of shares therein are requested to pay the amount, on or before the 21st of February next, at the bank of Messrs. William Williams Brown, Charles Barr, and Co., bankers, Leeds. By order of the directors, JOHN BLACKBURN, Sec.

Company's office, 26, Albion-street, Leeds, Dec. 27.

N.B.—Shareholders neglecting to pay their calls, according to notice, will incur the absolute forfeiture of their shares. 17

CORNWALL GREAT UNITED MINES.—At a Special General Meeting of the shareholders of this company held, pursuant to notice, at the York Hotel, King-street, Manchester, on Friday, the 11th instant,

Mr. MEYERFRANKS in the chair,

It was unanimously resolved,—

1. That all those shares, amounting in number to 1104, on which the last call has not been paid, be, by this meeting, declared absolutely forfeited.

2. That Mr. Thomas Walker's offer to this meeting, of £5100 11s. for the company's mines, which are situate in the parish of Linkinhorne, in the county of Cornwall, together with the machinery, minerals at grass, utensils, and other things in and about the same, be accepted.

3. That all necessary parties be hereby authorised to join in conveying and assigning the said mines, machinery, minerals at grass, utensils, and other things in and about the same, to Mr. Thomas Walker.

4. That the thanks of this meeting be given to Mr. Meyerfranks, for his obliging conduct in the chair.

Take notice—That a SPECIAL GENERAL MEETING of the shareholders of this company will be held at the George and Vulture Tavern, Cornhill, in the city of London, on Wednesday, the 2d day of March next, at Twelve o'clock at noon precisely, to confirm the above resolutions.—Dated the 14th day of February.

By order of the committee, THOMAS CROSS, Acting Sec. 18

Just published, Part I.,

COMBUSTION of COAL, CHEMICALLY & PRACTICALLY CONSIDERED. With coloured plates.

By CHARLES WYE WILLIAMS, Esq.

London: Simpkin, Marshall, & Co., and J. Weale; Birmingham: Wrightson and Webb. 19

ANDREW SMITH'S PATENT WIRE ROPES, for standing rigging, lightning conductors, strapping of blocks, mining, railway, and general purposes; about half the size and weight of hempen ropes, and 25 per cent. cheaper. Testimonials to that effect, with specimens, may be seen, and every information obtained, at the office, 27, New Broad-street, city; manufactory, Mill-wall, Poplar; and also of the following agents:—

Robertson and Co., 12, Goree Piazzas	Liverpool.
Matthias Dunn	Newcastle-on-Tyne.
Joseph Bathway	Plymouth.
John Thompson and Co.	Wigan.
J. T. Treguline	Truro.
Thomas Mooney and Son	Dublin.
Perrin and Nolan	Wicklow.
Coates and Young	Belfast.
James Kibble and Co.	Glasgow.
James Gunn	Leith.
J. M. Beattie, Crammond's-lane, High-street	Dundee.

ANDREW SMITH'S PATENT WIRE ROPE.

This rope has been in use for standing rigging in her Majesty's Navy, and in a great number of merchant vessels, for upwards of six years, and is giving the highest satisfaction; the rope is also employed in various mines and railways in different parts of the kingdom. 20

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonials to its usefulness with which the Manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.:—

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name in evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 21

THE THAMES TUNNEL is Open every day (except Sunday) from Nine in the morning until Six in the evening, and is lighted with gas. The entrance at present is on the Surrey side of the river, close to Rotherhithe Church. The Tunnel is now completed to the extent of 1107 feet. Admittance, One Shilling each. Notice.—The Tunnel will be shortly closed to the public, in order to finish the Works. By order, J. CHARLIER, Clerk to the Company.

Company's Office, Walbrook-buildings, Walbrook, Feb. 15, 1842.

N.B.—Conveyances to Rotherhithe, by omnibus, from Piccadilly, Charing Cross, Fleet street, and Gracechurch street; and, by steam boats, from Chelsea, Vauxhall, Lambeth, Hungerford, the Old Swan Pier, and London Bridge, to the Tunnel Pier at Wapping. Books, with plates descriptive of the works, are sold at the Tunnel, price One Shilling. 22

PROPERTIES OF HOT AND COLD-BLAST CAST-IRON.

[Concluded from last week.]

The conclusion at which Mr. Hodgkinson arrives, and to which Mr. Fairbairn may be held to assent, is stated in that gentleman's report as follows: "Beginning with No. 1 iron, of which we have a specimen from Buffery Iron Works, a few miles from Birmingham, we find the cold-blast somewhat surpassing the hot-blast in all the following particulars:—Direct tensile strength, compressive strength, transverse strength, power to resist impact, modulus of elasticity (stiffness), specific gravity, whilst the only numerical advantage possessed by the hot-blast iron is, that it breaks a little more than the cold-blast iron before it breaks.

"In the irons of No. 2 the case seems, in some degree, different; in these the advantages of the rival kinds seem to be more nearly balanced; they are still, however, rather in favour of the cold-blast. Referring to No. 2 iron, from the Carron Works, in Scotland, we find the tensile, compressive, and transverse strengths, together with the modulus of elasticity and specific gravity all higher in the cold-blast than in the hot-blast, whilst the ultimate deflection and power of sustaining impact are greater in the hot blast. The cold-blast iron is the better, but the difference is very small. In the No. 2, from the Coed-Talon Works, in North Wales, the tensile strength is greater in the cold-blast than in the hot; but the resistance to compression is higher in the latter than in the former, and that is the case with the specific gravity.

"So far as my experiments have proceeded, the irons of No. 1 have been deteriorated by the hot-blast; those of No. 2 appear also to have been slightly injured by it, whilst the irons of No. 3 seem to have been benefited by it. The Carron iron, No. 3, hot-blast, resists both tension and compression with considerably more energy than that made with cold-blast; and the No. 3, hot-blast iron, from the Devon Works, in Scotland, is one of the strongest cast-irons I have seen, whilst that made with the cold-blast is comparatively weak, though its specific gravity is very high, and higher than the hot. From the evidence here brought forward, it is rendered exceedingly probable that the introduction of the hot-blast into the manufacture of cast-iron, has injured the softer irons, whilst it has frequently mollified and improved those of a harder nature; and considering the small deterioration that the irons of the quality, No. 2, have sustained, and the apparent benefit to those of No. 3, together with the great saving effected by the heated blast, there seems good reason for the process becoming as general as it has done."

The great extent of the experiments on which this opinion is based, and the care manifested in conducting them, together with the undoubted impartiality of the experimenters, induce us to assent to it, notwithstanding many particular cases which have seemed to us to bear an interpretation more in favour of irons manufactured with heated air, and notwithstanding what we might have been led to expect from the greater purity of the hot-blast irons. Taking the rival irons, however, at par, as regards their mechanical values, the expense of the modes of manufacture is such as to warrant us in believing the introduction of the hot-blast to be one of the greatest improvements of recent years. This, we think, is clear upon theoretical grounds, but we may, in the first place, inspect the facts of the case.

When iron is smelted by the cold-blast, the coal is previously converted into coke, by which process it loses more than half its weight. The matter driven off by coking constitutes a most important part of the fuel, as coal gas and other inflammable products. When the hot-blast is employed, coking is not necessary, but leaving the expense of coking out of consideration, the materials employed (and, consequently, the expense incurred) in producing a ton of iron stand as follows:—

At the Clyde Iron Works, near Glasgow, in 1829, when the combustion was effected by the cold air-blast, there were consumed—

	Coals. Tons	cwt.	lbs.
For smelting, three tons of coke, equal to	6	13	0
For the blowing engine	1	0	7
Total coal per ton of iron	7	13	7
Limestone	0	10	56

In 1831, with the hot-blast at 450° Fahr., coke being still used for smelting, there were consumed—

	Tons	cwt.	lbs.
For smelting, 1 ton 18 cwts. of coke, equal to	4	6	0
For heating the air	0	5	0
For the blowing-engine	0	7	4
Total coal per ton of iron	4	18	4
Limestone	0	9	0

In 1833, with the hot-blast at 612° Fahr., raw coal alone being used, there were consumed—

	Tons	cwt.	lbs.
For smelting	2	0	0
For heating the air	0	8	0
For the blowing-engine	0	11	2
Total coal per ton of iron	2	19	2
Limestone	0	7	0

Between these years the daily quantity of iron from a furnace was increased from six to nine tons, and the expense reduced from 4l. per ton to 2l. 12s.

The registers of other works exhibit nearly the same results.

At Calder Works, the consumption has diminished in the proportion of 7 tons 17 cwt., to 2 tons 2 cwt.; and the limestone is diminished from 13 cwt. to 5½ cwt. At the Codnor Park and Buttery Works, in Derbyshire, each furnace in 1829 turned out about 29 tons of iron weekly. They were worked, of course, with coke, and blown with cold air. Each ton of iron required for its production 6 tons 10½ cwt. of coal made into coke, and 17½ cwt. of limestone. By the introduction of the hot-blast, the same furnaces turn out each 49 tons of cast-iron; and every ton of iron requires for its production only 3 tons of coal (not made into coke) and 15½ cwt. of limestone.

These facts, which might be considerably extended, sufficiently establish the advantage in point of economy of the hot over the cold-blast. As to the actual saving, it, of course, varies in every work, according to the nature of the coal, and the care with which the operation is conducted. The way in which the heated air acts is very obvious. When a forced stream of air is employed for combustion, the smelting temperature must evidently be affected by the temperature of the air injected; for the air introduced must be brought up to the heat of the furnace when this has attained a state of equilibrium; and the colder it is when introduced, the more heat will be expended in effecting that object. But this is not all. The heat developed in common cases of combustion by cold air is distributed in three portions; one is communicated to the burning fuel; another is carried off with the volatile products; and a third remains to operate upon any surrounding matter to be afterwards dissipated by wider diffusion. By this distribution, there is a nearly equal temperature all over the interior of the fire-place. When the air is forced into the fire in a strong current, the oxygen of it, or that element which supports the combustion, is brought most immediately into contact with the burning fuel, and there is a certain degree of concentration [illegible]

[illegible]

for the smaller amount of fuel necessary by the hot-blast process than by the other, for there is little combustion of fuel beyond what produces an actual effect in the reducing process. It also accounts for the smaller quantity of limestone necessary for separating the clay, for, the more intense the heat, the smaller is the quantity of flux required for the fusion of clay. And hence also the greater rapidity of the process—and, consequently, the additional quantity of cast-iron obtained from a furnace in a given time.

This is the explanation suggested by Dr. Thomson in his report to the British Association on the composition of cast-iron; and there cannot be a doubt, but that it is the correct one. It may be objected, by those who are aware of the fact, that, by the cold-blast process, the furnaces work better in winter than in summer, turn out more iron, and require both less fuel and lime. The same holds true, to a small extent, in the hot-blast process, and yet the air is heated during both seasons to the same temperature. The idea embodied in the objection here stated, actually led, at one time, to the practical blunder of cooling the air, instead of heating it before it was introduced into the furnace. The explanation of the apparent anomaly has, however, no reference to the temperature of the air, but to its hygrometrical state. Moisture is injurious to all forms of the process,* and the warm air of summer contains more moisture than the cold air of winter; were both equally dry, the furnaces would undoubtedly work better in summer by the cold-blast process, than in winter, by all the difference of temperature. Indeed, the drying of the air before blowing it into the furnace was made the subject of direct and successful experiment at the Clyde Iron Works, and, I believe, elsewhere, before the invention of the hot-blast process.—*Glasgow Mech. Mag.*

LAW INTELLIGENCE.

[It is understood that the great cause relative to minerals under the soil, now pending between Lord Hatherton and the Marquis of Anglesey, will come on for trial at the next Worcester assizes. Sir Thomas Wilde is specially retained for Lord Hatherton.]

LAW OF PARTNERSHIP—IMPORTANT CASE.

ROLLS' COURT—FEB. 15.

Kirkman v. Andrews.—This cause came on upon plea to the plaintiff's bill.—Mr. Chandless stated, that the bill was filed by Charles Felton Kirkman, against the members of the Agricultural and General Life Assurance Company, praying for a declaration of the court, that the defendant having been removed from his office of resident manager of the company, was, under the articles of partnership of the company, of the 17th of February, 1840, entitled to receive 3500l., being seven years of his annual salary of 500l. a-year; and also for a declaration that a distress for a quarter's rent, and a sale of the plaintiff's goods thereunder, was procured by the fraud and covin of the acting committee. The defendants had pleaded that they were informed, and believed, that the plaintiff, before June, 1821, was a trader, was indebted to a creditor in 100l. and upwards; had committed acts of bankruptcy; that a commission had been issued, on which he was declared a bankrupt, assignees chosen, and that he had obtained his certificate; and that afterwards he carried on business, was a trader, indebted to other creditors, committed an act of bankruptcy, and a commission was issued, on which he was declared a bankrupt; that that commission had never been superseded; that the plaintiff had not obtained his certificate, and that 10s. in the 1l. dividend had not been paid; and the plaintiffs submitted that the assignees under the last commission were necessary parties.

Mr. Turner and Mr. Taylor for the plea, argued that the defendants were entitled to the protection of having the assignees, under the second commission, brought before the court as parties, for otherwise they would not be bound by the account taken in the cause, and might file a fresh bill.

Lord Langdale said that there was a sufficient allegation of information and belief; and if he found a distinct authority against it, he should consider the averment of the bankruptcies sufficient, and not overrule the plea. He would mention it in a day or two.

THE NORTHERN RAILWAYS' DISPUTE.

VICE CHANCELLORS' COURT—FEB. 15.

The North Clarence Railway Company v. the Great North of England, Clarence, and Hartlepool Junction Railway Company.—The Vice-Chancellor granted an injunction in this cause in the 12th of August last, to restrain the defendants from constructing their railway across the Sherburn branch of the North Clarence Railway, on condition that the plaintiff should undertake to commence, within a limited time, an action of trespass against the defendants, for the purpose of ascertaining the validity of a right, which the latter claimed under the Act of their incorporation, of crossing the plaintiffs' railway. This action was accordingly commenced on the 3d of September, in the Court of Queen's Bench, but had not yet been brought to a trial, owing to the pressure of business in that court; nor is there any likelihood of its being heard until Trinity Term next. The defendants derive their powers from the Act of Parliament, 1 Vic., c. 95, and are bound under it to complete their railway within five years from the passing of the Act (3d of July, 1837). The dispute between the parties to this suit arose respecting the construction of the 43d section of this Act, the defendants insisting that it authorised them to cross the plaintiffs' railway without their consent, and the latter contending that their consent was necessary. In the month of April, 1837, the Great Junction Company had taken a lease from the Rev. Hopper Williamson of so much land as [illegible] part of the Sherburn branch of the North Clarence Railway, where they intended crossing it, as was necessary for the construction of their railway; but it was provided that in case such railway should not be completed within five years from the date of the lease, the latter should be void and determine. The Great Junction Company having been prevented by the injunction of the court from proceeding with their works on this piece of land, lately applied to Mr. Williamson for an extension of time, but that gentleman declined complying with this request. Under these circumstances, the defendants applied to the court to dissolve the injunction, on their undertaking to compensate the plaintiffs for any damage which they might sustain from the works of the defendants, in case the Court of Queen's Bench should decide that the latter have no compulsory authority to cross the plaintiffs' railway.

Mr. Richards, Mr. Gregory, and Mr. Tomlinson in support of the motion, dwelt upon the irreparable nature of the injury which the continuance of the injunction would inflict on the defendants. Even if the plaintiffs were successful in the action now pending in the Queen's Bench, their case would be of no advantage to them, as their rights under the Act of Parliament, and under their agreement with Mr. Williamson, would, in all probability, expire before the trial of the action.—Mr. Stuart and Mr. Gifford opposed the motion.

His Honour said that when this matter was before him last August, his attention was called to the circumstance of the Act of Parliament being rather a permissive than a compulsory Act. It appeared to him to be framed only to give the railway company large powers for treating with parties interested in the land over which it was proposed to carry the railway. The 43d section was for the purpose of preventing disputes as to how the crossing should be made, but in this case the defendants had no right, on their own authority, to cross the plaintiffs' railway, nor did the Act give them authority to take an inch of land without the consent of the owners, even though the existence of the railway were to depend on it. He might be wrong in holding this opinion, and, therefore, the right should be tried at law. His Honour concluded by refusing the motion.

INFRINGEMENT OF PATENT RIGHT.

COURT OF QUEEN'S BENCH—FEB. 15.

Cooke v. Pearse.—This was an action for the infringement of a patent. The patent was taken out for improvements in the making of [illegible] blinds for carriages. Several objections were made to the specification; first, that it did not describe with sufficient accuracy the nature of the invention, for that the old and new parts were not properly distinguished from each other; and next, that in stating that the invention was applicable to carriages, the patentee claimed too much, for that it was not applicable to chariots and [illegible]

LIABILITY OF SHAREHOLDERS—ACTION FOR CALLS.

COURT OF QUEEN'S BENCH—FEB. 17.

The Birmingham, Bristol, and Thames Junction, also West London Railway Company v. Hall.—This was an action brought to recover [illegible]

Henry Cassen (an accountant from Bath) was called to prove the execu-tion of the deed by the defendant, but the witness being a subscriber himself though he had paid up no call, was ordered to stand down for the present, until it was decided whether or not he should be considered as interested party. The subscription of Richard Hall to the Parliamentary deed was proved, subject to a question as to his identity, which was reserved.

The son Brock (a clerk) proved that the calls were duly made and advertised; that the company had been authorised by law to change their style from the Birmingham, Bristol, and Thames Junction Railway to that of the West London Railway. The works had been suspended.

Mr. Curry said that the defendant had sold his shares before the calls were made, having paid merely the sum first required, and they were registered in the name of another person. Moreover, the works were not going on; all the money received since 1836 had been spent in law; the directors were ashamed of their old name, they had assumed a new one, and had not even paid up their own shares. The registered shareholders to whom the defendant had transferred his ten shares had paid up all the calls. In fact, the company now wanted to be paid a second time for the same ten shares, on an undertaking that would never be carried on.

W. P. Cassen proved that on the 5th of July, 1836, he purchased ten shares from Mr. Hall before the first call was made. Since then witness had paid 10l. on the ten shares. Defendant was at that time a share-broker.

Henry Cassen was called on to give evidence for the defendant. Witness had acted at Bristol as agent to the company, and some complaints having been made against the undertaking, he was instructed to tell the subscribers that they would not be liable for any responsibilities, unless they paid up the calls and registered. He disposed of about 500 shares at Bristol.—In cross-examination by Mr. Platt, witness said he sold ten shares to the defendant, but was not sure whether he had paid the deposit. Witness cut the counterfoils out of his book afterwards, but could not well say why. The deed arrived in two sheets, one containing the deed, the other seals for, and places for the signatures of subscribers. On this account, some sold afterwards that they did not know what they had signed.—Counsel for the defendant insisted that a signature in such circumstances was not a proper execution.—It appeared, in the course of examination, that Mr. Hall had sold ten shares for 9s. 6d. each, but there was no proof that these were the ten shares he had subscribed for, and, finally, a letter was handed in, signed by Mr. Hall himself, acknowledging that he had subscribed the contract deed, though he had disposed of the ten shares.

Lord Denman, in summing up, condemned the irregular mode of taking the subscription. To have one parchment holding the deed, and another holding the signature, and to say that signing the latter was executing the deed, was open to very serious doubt. Mr. Cassen was also very wrong in cutting out the counterfoils to the certificates, but the company were not open to the charge of fraud and covin.

The jury retired, and, after considerable delay, returned a verdict for the plaintiff, being of opinion that the deeds were attached at the time of signing.

IMPORTANT RAILWAY CASE.

COURT OF COMMON PLEAS—FEB. 15.

Guest v. the Sheffield, Ashton-under-Lyne, and Manchester Railway Company.—This was an action brought by Sir John Guest, Bart., the great ironmaster and owner of the Dowlais Iron Works, Glamorganshire, against the Sheffield and Manchester Railway Company, for the recovery of 944l. 16s. 4d., alleged to be due for fifty tons of 50 lb. rails, and the necessary fastenings, supplied by the plaintiff to the defendants.

Mr. Serjeant Wilde briefly stated the case to the jury, and read a letter from Mr. Vignoles, late engineer to the company, to Sir John Guest, containing the order for the rails, &c., which were the subject of the present action. He then called Mr. Caleb Griffiths, agent to Sir John Guest, who proved the shipment, at Liverpool, of the iron rails and fastenings, to the order of Mr. Vignoles, at three different dates, from December, 1839, to the 9th of January, 1840, and produced the invoices.

Mr. Gibson was then examined—In June, 1840, made application to the Sheffield Railway Company, at Manchester, about certain iron rails, and went on the works to a place called Woodhead, where he saw the rails (which were patent rails laid upon cross sleepers) laid down for the purpose of removing earth from a tunnel which the company were in the course of excavating at that place. Had a conversation with Mr. Sidebotham, the deputy-chairman of the directors, who said the company had not paid for the rails, because Mr. Vignoles had given the order for them. Witness said he saw they had been used, and he hoped they would not object to pay for them. Mr. Sidebotham replied that the contractors were working the line, and not the company, and he at length said that a general meeting of the directors would shortly be held at Manchester, at which Lord Wharncliffe, their chairman, would preside, and recommended witness to attend. Witness received notice of the meeting to be held at Manchester. Went there on the day mentioned, but it happened that the meeting was not held there, but at a place in Yorkshire, about thirty miles off; witness, in consequence, was unable to attend. Subsequently saw Mr. Sidebotham, who said that these rails formed part of Mr. Vignoles's claim against the company; it was immaterial to the company whom they paid, but if they paid Sir J. Guest, Mr. Vignoles might claim for them. Witness asked if they would pay him, if he got an engagement from Mr. Vignoles, pledging himself not to claim. To this proposition witness received no definitive answer, but was told he had better write about it to the company. Was also told that the contractors claimed for these rails.—The witness was cross-examined by Mr. Serjeant Channel, but nothing new was elicited.

Mr. John Smith, the contractor, was next called—He had laid down the rails now in dispute. They answered the purpose very well. Mr. Sidebotham, Mr. Rhodes, and other of the directors, frequently went over witness's part of the work, and saw what was going on. Mr. Vignoles was engineer to the company all the time that witness was contractor there. Never made any claim on the company for these rails. The rails were laid down, some on stone, some on cross sleepers, and some on longitudinal sleepers.—Cross-examined by Serjeant Channel—Never saw rails laid on longitudinal sleepers before on any line. Laying these rails in so many different ways looked as if they were experimenting with them. Mr. Vignoles once purchased iron from witness's partner on behalf of the firm.—By a Juryman—The rails were not mere contractor's rails. They were fit for the permanent way. Contractor's rails weigh about 27 lbs. a yard, these rails were about 50 lbs. a yard.

Mr. Davis, clerk to the house of Guest and Co., in London, proved the sending of the invoices of the fastenings to Mr. Vignoles.—This was the whole of the evidence for the plaintiff.

Mr. Serjeant Channel then addressed the jury. He stated that Mr. Vignoles had been engineer to the company, but that he had resigned his office in December, 1839. The rails were ordered previous to Mr. Vignoles's resignation, and the fastenings had not been ordered till after; the sum due for the fastenings being about 9ol., was paid into court. The learned counsel then called

Mr. Charles Vignoles—Am an engineer. Was engineer to the Sheffield, Ashton-under-Lyne, and Manchester Railway Company from 1836 to 1839; knew Smith, the contractor; addressed a certain letter to Sir J. Guest for some rails; had not the authority of the directors for so doing, but did it in anticipation of receiving their authority. In the autumn of 1839 did obtain that authority, in the shape of an order to lay half a mile of the permanent way westward from the tunnel. It was well understood that the rails now in dispute were those which were to be laid down. In November, 1839, I considered these rails to be the property of the company; the company considered them to be the property of the contractor.—Mr. Serjeant Wilde did not reply.

This was the whole of the evidence.

Chief Justice Tindal directed the jury to return a verdict for the plaintiff, observing to the counsel for the defence—After this evidence you are quite safe, as Smith has, on his oath, disclaimed the rails being his property.

The jury returned a verdict for the plaintiff for the amount sought.

LITERARY NOTICES.

The Year Book of Facts for 1842.—The fourth volume of this excellent little work has recently made its appearance, and fully maintains the character justly awarded to its predecessors—that of being an accurate and careful collection of every thing interesting to the general reader that has transpired in the scientific world during the past year, whether as discoveries, theories, or novelties. The volume is neatly got up, and will be found eminently useful to all (and who are not?) interested in the progress of scientific investigation, as an epitome of the labours of the savans, both at home and abroad, in each department of learned research, classified under their respective denominations, with references to authorities where the more detailed reports are to be met with. Much credit is due to the editor for the ability displayed in condensing the many important data with which the work abounds—of some of the more interesting of which we shall occasionally avail ourselves, as being of permanent value to the mining and manufacturing communities, or improvements that have previously been detailed at length in our columns. We are at a loss to account, however, for the volume being styled the *Year Book of Facts for 1842*—it being a record of events during the year preceding. In taking our leave of the work, we most cordially commend it to the notice of our readers, as being one of great utility, and worthy of the most general support.

Charlwood and Lewis's Newspaper List.—We take some blame to ourselves for neglecting so long to notice this unique production, the use of which, as a work of reference on all matters concerning Members of Parliament, circulation and politics of newspapers, &c., must be highly appreciated, for its completeness and correctness, by all who possess it, and those who do not, we advise to possess one, fully satisfied that they will henceforth consider it, as we do, a requisite for every description of public or private office.

PROCEEDINGS OF PUBLIC COMPANIES.

CANDONGA MINING ASSOCIATION.

A special general meeting of proprietors of the above association was held on Saturday, the 12th inst., at the George and Vulture Tavern, pursuant to advertisement, for the purpose of receiving from the directors "a statement of the circumstances under which mining operations had been resumed, on a limited scale, at Candonga."

JOHN CATTLEY, Esq., in the chair.

The SECRETARY (Mr. Heppel) read the following report:—

REPORT.

The perusal of the minutes of proceedings of the last general meeting of proprietors of this association, held on the 25th of February, 1841, will have reminded those now present that a resolution of a previous special general meeting for dissolving the company was then confirmed, and that, moreover, authority was given to the directors to send conditional instructions for the sale of the company's property in Brazil. Acting under this resolution and authority, the directors lost no time in forwarding to the company's agents in Rio de Janeiro ample powers for effecting such sale, but accompanied by instructions to abstain from the immediate exercise of them in the event of any discovery having in the mean time been made at Candonga, which in their judgment warranted the continuation of mining operations. No such discovery having been made, all operations were, in the month of June last, abandoned; the establishment at Candonga was broken up, and various portions of the moveable property were, as opportunity offered, disposed of—no offer being, however, made for the purchase of the mine itself. While Captain Dalley was at Rio, waiting the sailing of the packet for England, two miners, of good character, who had gone out originally with Captain Dalley, and who had continued on the mine till the period of its abandonment, made representations to Messrs. Tully and Co. of their conviction that the mine had not yet had a sufficient trial, and that there was good reason to expect that gold might yet be obtained in remunerating quantities; and, as a proof of the sincerity of their conviction, they offered to go back to Candonga at their own expense, and to work there for a twelvemonth on tribute; that is to say, that their only pay should be a portion (one third) of any gold they might extract—the company providing them with a limited number of labourers, and incurring an outlay for materials, altogether at an expense amounting to less than 100l. After the most careful examination of the representations so made, aided by the judgment of Captain Treweek, of the Cocaes Mine, then in Rio, Messrs. Tully and Co., acting in the spirit of the discretionary powers with which they were invested, concluded a contract, by which, under very stringent limitations of expenditure and risk, the mine will be subjected to a further trial. The latest dates from Rio are of the 24th December, which bring information that, on the 22d November, the miners and labourers had arrived at Candonga, and had resumed operations on the 26th. In considering this unexpected position of the company's affairs, the directors have had the benefit of the presence and assistance of the committee of proprietors, appointed at the last general meeting, and the impression on the minds of all appeared to be, that whatever may be the issue of the new trials, Messrs. Tully and Co. have exercised a sound discretion in the course they have taken. In giving expression, however, to this opinion, the directors are far from desiring to encourage any sanguine expectations, or from imputing blame to the former officers of the company, inasmuch as the chance of obtaining profitable returns from Candonga may be worth the small outlay now incurred, although it would by no means have justified the maintaining a numerous, and, consequently, an expensive, establishment.

The CHAIRMAN, in commenting upon the report, stated that, upon consideration, the proprietors would see that the course adopted by Messrs. Tully and Co. was not in contravention of the resolution they had come to at the last general meeting, inasmuch as it was obviously inexpedient utterly to abandon their territorial property, without taking a further chance of its meeting with a purchaser. Should no advantage result from the experiment, it would, as the report stated, have been tried at a very small cost, and, if productive of beneficial results, it would convert an unsaleable into a saleable property.

Mr. JOHN TAYLOR gave a lucid summary of the mining phenomena which had presented themselves at Candonga, and which, in his judgment, fully justified Capt. Dalley in the advice he had given, to stop the workings; at the same time, he was free to admit the extreme difficulty in determining the exact period at which it was proper to discontinue operations in a mine, and especially in a gold mine; he, therefore, thought that Messrs. Tully and Co., in the situation in which they were placed, had no other course open to them than the one they had taken.

Mr. KINGDON, as one of the committee of proprietors appointed at the last general meeting to co-operate with the directors in winding up the affairs of the company, felt himself called upon to state the impression made on his mind, by a careful and attentive perusal of the documents furnished by Messrs. Tully and Co., as the basis upon which they had come to the determination of concluding an engagement for the experimental workings in question. The result of the consideration he had been able to give to the subject was, that, without, in the slightest degree, impugning the prudence of Captain Dalley, in discontinuing operations at Candonga, he felt that Messrs. Tully and Co. were entitled to the thanks of the shareholders, for their scrutinising and anxious investigation of the representations made to them, and for the care and caution they had manifested in the contract they had concluded. As one of the committee, he earnestly invited his brother proprietors to receive with approval the report of the directors.

Mr. TERRY inquired whether the experiment now entered upon was likely to entail a necessity for any further call?—The CHAIRMAN said he was happy to be able to state, in reply, that the company had, in the hands of their bankers, in cash and Exchequer Bills, the sum of 7000l., chargeable on account of unpaid dividends, with a sum not amounting to 200l.; so that, should the experimental operations turn out an utter failure, there would still remain a balance of assets divisible among the proprietors.—The question, "That the report be received and adopted," was then put, and carried in the affirmative, *nem. con.*

The thanks of the meeting to the directors, for their uniform attention to the interests of the association, were moved and voted by acclamation, and the meeting adjourned *sine die*.

GREAT WHEAL CHARLOTTE MINING COMPANY.

A special general meeting of this company was held on Monday, the 14th inst., at the George and Vulture Tavern, for the purpose of confirming the resolutions passed at a preceding meeting, the minutes of which having been read, were duly confirmed.

LONDON AND GREENWICH RAILWAY COMPANY.

The half-yearly general meeting of the proprietors of the above company was held on Monday, the 14th inst., at the London Tavern.

W. SHADBOLT, Esq., in the chair.

The formal business of the meeting having been concluded, the SECRETARY read the directors' report, which expressed their gratification at the efficient and prompt manner in which the several new works had been completed. Great progress had also been made in relaying the permanent way and asphalting the arches—[illegible] had been thus expended. The capital showed a reduction of [illegible] for the half-year, as compared with the former half-year; the traffic account showed a decrease of 41,331 passengers, and the profit of the half-year only amounted to an amount of [illegible], which was too small to warrant the declaration of a dividend.—The report was then adopted.

The CHAIRMAN then proposed that Mr. J. Field should be elected a director, in the place of Mr. Entwistle, who had resigned; upon this a conversation ensued, Mr. Field being objected to by the majority of the [illegible] holders, in consequence of his holding only preference shares; it being urged that, as he received from 5 to 6 per cent. as long as the original holders did not receive 5 per cent., it would be to his interest to prevent the original proprietors from ever obtaining a dividend to that extent, as his shares would rank with the original ones, and be liable to all the fluctuations of trade. An amendment upon the original motion was then proposed to the effect—"That every director should hold at least 200 original shares," but which, after some discussion, was withdrawn, on the understanding that the directors would, before the next meeting, each make up their amount of original shares to 200.—Mr. Field was then unanimously elected.—Messrs. Shadbolt, Jeffery, and Wheeler were re-elected directors, and the meeting adjourned.

CLARENCE RAILWAY.

On Thursday, the 17th inst., a special general meeting of the proprietors of the above company was held at the George and Vulture Tavern.

H. BLANSHARD, Esq., in the chair.

The formal business of the company having been concluded, the SECRETARY read the directors' report.

After a few remarks from the CHAIRMAN, it was moved, seconded, and agreed unanimously—"That the report be received and adopted."

Messrs. W. H. Shaw, J. Blackett, and Lieut. Curtis Reed, were unanimously elected directors, in room of those directors who had resigned. A long conversation ensued upon the state of the company's financial concerns, during which it was determined that a further appeal should be made to the proprietors to subscribe 5l. per share who had not already done so, in order to prevent an application to Parliament, which might deprive the company of many important privileges, after which the thanks of the meeting were voted to the chairman, and adjourned to the 15th of February, 1843.

RAILWAYS.—In the House of Commons, last night, the London and Greenwich and Midland Counties Railways Bills were read the first time.

SCIENCE.—It is in science as with one that rises early; he eagerly beholds the morning red, then impatiently looks for the sun, and when it appears is blinded.—*Goethe*.

* The workmen who attend the practical treatment of blowing steam into the furnace, [illegible]

GEOLOGY.—A NEW SYSTEM OF PHILOSOPHY.—No. VI.

BY HENRY GRAHAM MONTAGUE, ESQ.

THE EARTH.

Who is he would stand at the portals of PRODUCTION, and lay down limits to the mind's advance, saying to the soul thirsting after knowledge, "thus far shalt thou go, and no farther." Is not the Mind, in its conceptions, an eternity within itself? It bows in obedience to no earthly power—it cannot be fashioned to any set of ideas—but, soaring beyond them, on the pinions of imagination, it forms and fashions others of its own—it rests not content in the palace or the cot, but walks through the earth unfettered by time or space—it pries into all things, and lives, and moves, and acts, as though unconscious of the clog which binds it to the earth—it laughs to scorn the manacles of fanaticism, the dungeon's gloom, the restraints of bolts and bars, and seeks enjoyment from each dreary painful scene, in sunny fields and cloudless skies—it turns, with loathing from what men call pleasure, because it sees disease and death concealed within the cup—the knees may bend in prayer, the lips may move, but yet the Mind will wander far away, as though its innate pride disdains the homage paid—on the bed of death, when the body experiences the pangs of dissolution, still, still it wanders in its full-fledged strength, through palaces and bowers, deriving health and youth from every glowing scene it visits—it proclaims power within itself—pain, grief, or madness, may cloud its conceptions, but, from the midst of desolation, the coruscations of its beauty still shoot forth, betokening its presence and its power.

THE EARTH is the one planetary body of which man forms an integral part, being a lesser system of systems, embracing, in the one whole, numerous forms, bodies, principles, and proximate principles—united, uniting, suffering, and contending, within a prescribed medium. It is a reproduction of form, from form previously existing—an union of the primary principles with each other, and of proximate principles proceeding therefrom—a congeries of etherial, aerial, vapourous, aqueous, and consolidated bodies, progressively developed—of elementary principles and proximate principles, locally or generally diffused throughout the ONE WHOLE; it is a changed and changing body, and a perpetually varying result; it is produced, and still producing, ever changing in its parts, disposition, quantities, qualities, capacities, and powers; it is life and death necessarily united together—good and evil necessarily depending on each other. It is a body having capacities and powers of its own, but dependent for its manifest phenomena on the SUN, which is the superior planetary body, and of the system of which it forms an integral part, for the greater and fuller development of capacity and power. The earth is produced by an uninterrupted series of results, locally or generally manifest—of orders, genera, and species, generation succeeding generation, order arising from order, orders diverging into genera, genera diverging into species—produced simultaneously, or in succession—produced from the primary elements, or from the primary elements and the proximate principles proceeding therefrom, in their admixtures.

"The human understanding," says the learned Bacon, "resembles not a dry light, but admits a tincture of the will and passions, which generate their own system accordingly, for man always believes more readily that which he prefers. He, therefore, rejects difficulties, from want of patience in investigation—sobriety, because it limits his hope—the depth of Nature, from superstition—the light of experiment, from arrogance and pride, lest his mind should appear to be occupied with common and varying objects—paradoxes, from a fear of the opinion of the vulgar—in short, his feelings imbue and corrupt his understanding in innumerable and imperceptible ways." Modern geologists, while they condemn speculative philosophy, attempt to found systems, and to fashion worlds, by the agency of volcanoes, or by a superficial examination of the Devonian, Cambrian, or other strata, confounding and reversing the order of Nature in support of their several theories; they lay down the maxim that science must study only the laws of phenomena, and never their mode of production, simply because the difficulties in the way of investigation are too great to be grappled with by superficial observation; they reject the depths of Nature from being unable to fathom them; they studiously conceal facts by numerous unmeaning words, and even pervert those facts, lest the pedestal of fame and popular applause on which they stand should be removed from beneath their feet. As a branch of the great tree of human wisdom, geology has done much good service, but in the attempt of its professors to generalise and found systems upon particular phenomena, its end and aim, which is to instruct the multitude, and to initiate the learned in the mysteries of Nature, has been wholly lost sight of. Thus, for instance, rocks of defined character are termed limestone, granite, porphyry, basalt, or sandstone, and, so far, such classification is good, but of each of these products there are countless varieties, but all distinguished under one general term—*transition rocks*. Again, we have *diluvial*, *alluvial*, and *anti-diluvial*—terms founded upon erroneous suppositions and by-gone prejudices. Again, because volcanic action shifts the material of a stratum, or strata, from beneath, and spreads it over the surface of the earth, the material being sometimes, but not at all times, altered by the act of change, this ejected matter is termed volcanic, and, should it be consolidated, the rock is termed a volcanic product, and the whole system of crystalline rocks is referred to volcanic action—Nature being thus made the subordinate agent to the phenomena consequent on production. Again, on the same suppositions, we have the coined terms, primary and secondary, and numerous others, being necessary consequences of this theory, and these false inductions being dogmatically insisted upon as established facts, Nature is repeatedly lost sight of, being made the basis of assertions every way at variance with the manifest phenomena. Again, because, in the action of running streams, which decompose rocks, and carry off the material of beds, as also the material over which, or through which they pass, aggregates of sand are formed, as also beds of clay, such is rashly declared to be the one general process of Nature, the inference being, that all sands and clays are formed from disintegrated rock, whereas such phenomena are but local, and the rocks are produced from the disintegrated matter. Again, because a general decrease of the waters is manifest in all parts of the earth, and an increase, or encroachment of the waters, is manifest in localities only, the latter phenomena is made to take precedence of the former, instead of *vice versa*. Again, because the stratum of earth, locally disposed in the cold regions of the north, consists of the organic bodies of oceanic animals and vegetables, which could only have existed in this manner within the range of the tropical bend, the most groundless imaginings are put forth, in order to account for so simple a phenomenon, instead of drawing true inductions from existing phenomena. Volumes are written on the supposed *centripetal* and *centrifugal force*—*attraction* and *repulsion*—and on the nature and qualities of the interior of this planetary body, some dogmatists insisting it is of consolidated matter, increasing in density towards the *centre*; others having a nucleus of adamantine qualities; others, and the more numerous, are equally strenuous in advocating it to be a liquid fiery mass—a kind of high pressure engine, having safety-valves, all of which they profess to describe by diagrams, illustrative of this imagining—nay, they endow this fiery element with a certain degree of rational action, by which alternate elevations and depressions take place on the surface of the earth, and are found digging Artesian wells in hopes of finding hot water for the general uses of mankind. In the researches of all these theorists the light of observation and experiment is admitted only so far as is accordant with these theoretical views, the *modus operandi* of Nature being unanimously rejected.

In my preceding articles I have spoken of the ocean as a body of waters, varying in its quantities and qualities in local portions of the globe, and containing elementary principles, proximate principles, and compounds—atomic particles and aggregate masses, animal and vegetable orders, genera, and species, locally disposed or diffused, and continually diffusing throughout its medium, having no true geometrical form, perpetually varying in its quantities, in the disposition of its parts, and in its temperature. I now take my leave of it for awhile, and turn to the second page in the Volume of Production.

THE DESERTS—the vast, the magnificent sepulchres of the dead—the charnel houses where death, triumphant, holds his solitary court, spilling grim welcome on the passer by—the fearful and the terrible—and yet, in Nature, the sublime and beautiful. Here we behold terrestrial earth in its infant, helpless, naked state, gradually or suddenly expanding to maturity, as the concurrent causes of development may determine—the fountain heads of production of terrestrial, organic, and inorganic bodies, matter and motion commencing all the forthcoming results. The great deserts of the earth are ocean beds, from whence the waters have gradually receded, or, otherwise, have been suddenly thrown off by a general or local catastrophe; the former are more particularly distinguished, from the immense deposits of muriate of soda covering their surface, or locally or generally diffused through their strata; the latter, from the total absence, or only partial presence, of this material, and other peculiarities of the soil. Some of these deserts abound with naphtha, and other bituminous matters; others, as the Great Desert of Zaharab, have a hard bed of marl, uniting in its matrix vast accumulations of fossil bodies, and its surface covered with petrifactions and calcareous matters, over which the sands shift from place to place, in a similar manner as within the waters, being governed in their direction and disposition by the winds and local obstructions; the Lybian, Arabian, and Mesopotamian deserts, are a succession of hills and chains of hills of calcareous matter—of ponderable rocks—of beds of shell fish—of plains covered with the petrified bodies, and remains of bodies, of oceanic animals—of sands, being the comminuted particles of those bodies—of salt, in aggregate masses, or otherwise efflorescing over the surface—the whole material beneath the tread, and for some hundred feet below the surface, being the commingled wreck of oceanic orders and genera, or locally disposed in groups and families.

In almost every stratum of the great deserts of the earth, the fossil skeletons of myriads upon myriads of creatures of the deep, wholly, or partly, compose the strata termed earth, the same having preserved their entirety, or enough to identify them through a long succession of ages, and, speaking by their disposition and quantities, of ages previously existing, being the unerring evidences of the slow and progressive operations of Nature, and explaining, clearly and explicitly, the causes of effects manifest to observation. In some places are beds of pearl oysters, and groups of zoophites, manifesting the slow progress of generation in warm and tranquil seas—hills of cirrhipedæ, consolidated or decomposed—calcareous masses, composed of polypes, sponges, marine plants, and the relics of numerous species—echinites, crustacea, and other calcareous animals—plants, and atomic particles—all now united in close relationship as one whole, and awaiting other influences to make the union more complete. In some of the valleys every fossil is covered with a delicate bloom of sulphate of magnesia—in others, the muriate of soda, in large pure crystals, gives the earth a lustre almost too dazzling to behold—or, otherwise, the smaller particles rival the snow in purity and whiteness; here the rock is formed—there it is in the act of forming—here the aggregate mass is assuming a stratified appearance—in another place it is decomposing in all its parts, crumbling to pieces, and filling up the valleys. In the midst of scenes like these, of nakedness and desolation, not a solitary spark of life appears to relieve the eye from the sad monotony around; but the heart of the traveller quails within him as he wanders through trackless paths, inhales the burning poisonous blast, and stoops to the earth the wretched victim of ungovernable thirst.

In those deserts where the rains are unfrequent, being in some parts rarely, if ever, known, the vegetation consists of miserable scrubwood, sparingly distributed in localities, with here and there a solitary acacia standing, as a landmark to the wandering Arab; of animals there are none, not even a fly or gnat. The soil teems with poisonous gases and bitter salts, inimical to the development of life, and the arid burning atmosphere is equally inimical to its support and propagation. Such are the characteristics of all the Arabian, Syrian, and Persian deserts, seated within the broad belt of the torrid zone, and extending into more temperate climates; and such are the characteristics of the numerous islands in the Red Sea, the Persian Gulf, the Indian, Pacific, and Great Southern Oceans, where the crests of the reefs become elevated above the waters, and, so long as the moisture requisite for the production of organic bodies is withheld, the barren lands continuing such from age to age. In this state Nature sometimes slumbers for ages in her work of organic production, but in the fossil and mineral kingdoms her protean powers are daily and hourly manifest, in the transition of organic matter into inorganic; thus, the cast-off clothing of molluscous animals changes as acted upon by the local influences by which it is surrounded, decomposing, consolidating, aggregating, or dispersing, as the accidents of circumstance may determine; the sulphates, phosphates, nitrates, and muriates, appear in their varieties; salt is formed in the basins, gradually abstracted from the waters, or in hill masses, consolidating as rock, and the earths uniting with the acids form numerous compounds.

It is not my intention to confine my views to a small portion of the earths; the virgin soils, or deserts, embrace the larger half of the surface of the earth, comprising three-fourths of Africa, of Arabia, Syria, Palestine, Persian Kondistan, vast tracks in America, India, China, Australia, and groups of islands formed, or forming, in the several seas and oceans where the causes of effects are most manifest—the whole of these vast surfaces presenting to observation the like phenomena, interminable plains of sand, bare gravel, and calcareous matter—extensive beds of shell-fish, ocean marls, plains covered with salt, nitre, and phosphate of magnesia, selenite, jasper, and other bodies exclusively oceanic, or proceeding from the union of oceanic bodies and compounds; all appear to be what they truly are, beds of seas, some gradually elevated above the waters, others as gradually appearing as the waters decrease, others produced by the evaporation of the waters therefrom. Their sands are the ocean sands—their rocks are composed, or composing, from, and by, oceanic organic bodies, being chiefly carbonate and sulphate of lime, jasper, porphyry, and sandstone, and their stones and pebbles are petrifactions progressively advancing towards the mineral state. Some of the deserts, as those of Persia and Ava, abound with vast accumulations of animal bitumen, the very rocks being saturated *per se* with mineralised animal oil; some of these deserts are characterised by their abundance of salts; the great deserts of Zaharab, the deserts of Lybia, Persia, Mesopotamia, and Syria, are characterised by their vast accumulations of loose shifting sands; all of them have their local phenomena of production of mineral bodies, the strata of all are impregnated with sulphuric acid, bitter salts, bitumen, and other compounds, peculiar to their oceanic formation.

In vain in this grand and universal wreck of oceanic organic bodies will the geologist look for the material of the older soils of Europe, for beds of coal, of iron, of copper, of tin, of silver, of lead, for the trap, or lacustrine and other strata filled with terrestrial organic remains; the whole plateau, and the lower chains of hills, consist almost exclusively of oceanic matter, the organic bodies, and comminuted particles of bodies, becoming one, and now identified as the fossil and mineral kingdoms—its mountains furnishing proofs of other climes and of other influences—the oases and valleys through which the rivers flow, or the fresh waters percolate, furnishing proofs of the causes necessary to effect the end proposed by Nature, as terrestrial vegetable life. From local causes the local effects are produced; the dry and sandy deserts, inimical to life in every form, continue bare and desolate from age to age, and preserve, from decomposition and change, the beds of shell fish, and other marine products, which are thus, as it were, hermetically sealed from atmospheric influence. The plains and valleys free from sands exhibit the successive series of changes which bodies and aggregates undergo, when exposed to atmospheric influence; the whole bed of calcareous matter abounds with sulphuric acid—the surface of the earth is coated with salts—and some of the hills are almost wholly composed of this material, and abundance of neutral salts are everywhere manifest.

In this virgin state of the earth the metalloids only are manifest, if we except carbonates, sulphates, and phosphates of iron; *alluvial*, *diluvial*, or *anti-diluvial* soils are equally unknown, the vegetable series being confined to the boundaries of action of the waters. In the place of coal, the deserts of Persia and Ava possess vast accumulations of naphtha and bitumen; instead of terrestrial clay, here is an unctuous greyish marl, sometimes 300 feet in thickness, variable in its qualities, but uniting, in its bed, fossil forms innumerable; instead of gems and gold, all animated Nature appears to be converted, or converting, into stone. It is true that gold is found in abundance in some of those parts of Africa denominated the Desert, but, wherever gold is found, there terrestrial matters, and the waters, abound, for the one and the other, together with intensity of atmospheric action, are equally necessary to produce gold, and, where found in colder latitudes of the earth, it is as manifest a proof of change of the position of the earth as are the numerous families of organic bodies preserved through the lapse of time and the vicissitudes of change. Copper, also, and other metals, abound in the mountains, but the mountains, also, are existing evidences of change, and differ widely, in composition, from the hills, plains, and valleys, which comprise the deserts. But, although, in the arid tracks of the deserts, metallic beds are unknown, the elements of which most of them are composed may even, in this state, be in the soil, requiring, probably, only local influences to call them into being.

The prominent features of the young soil in its early development are silicious aggregates, as sands, magnesia, soda, lime, and the sulphates, phosphates, carbonates, muriates, and nitrates. In all, and through all, there is a manifest confusion—Nature is, as it were, struggling for resuscitated life. The first mineral aggregates produced from this commingled material is CHLORIDE of SODIUM, efflorescent and crystalline, as spreading over the surface of the soil, and foliated, or compact, as gradually formed in the loose calcareous mass; sometimes almost pure, at other times blending in its body carbonate of lime, and a variety of substances. The next, and most important compound simultaneously produced with salt is GYPSUM, or selenite, otherwise termed sulphate of lime. On the Arabian coast of the Red Sea there are vast accumulations of oceanic matter, consisting generally of both animal and vegetable remains, but now entirely removed from the action of the waters; the components of the masses are generally the sulphuric and carbonic acid, passing through the whole, as developed by the intense heat of the sun, and uniting with lime, soda, magnesia, and other earths. The sulphuric acid, in passing through the mass, unites with the lime, and the result is sulphate of lime, as ANAHRDRITE. Again, when hydrogen is received in the uniting mass, the triple compound *sparry gypsum*, or *selenite*, is the result. Again, the sulphuric acid, passing through the aggregate masses, it falls upon the atomic particles of those masses, in union with oxygen; chemical action ensues, simultaneously manifest in each atomic particle, the acid acts as the common basis of the whole, and ultimately unites the whole as a crystalline body or rock, being *rock gypsum* in its varieties. In this general union, the ultimate result depends, not only on local temperature and local secretion, but also on the degree of action and lateral pressure influencing the changing body. Thus the force of resistance opposed to the free expansion of the molecules of matter, prescribes the limits of extent of each crystalline aggregate; the resistance of the bodies in contact overcoming the energy of action, the several particles being in this manner forced into union, and thus consolidated as rock.

SULPHATE OF LIME, OR GYPSUM, as is well known, is very extensively disseminated through the upper strata of the earth, under a variety of forms and combinations, and is almost invariably in close proximity to salt beds. Such is the case in this its primary development, the presence of salt being essential to its composition and character. Sometimes it is developed in extensive beds of sand, aggregating with lime and other oceanic matters, the SPARRY GYPSUM being free in its development, shooting forth above the sands in vast quantities, being too bright and dazzling to gaze upon during the day. In some of the beds it forms strata of a foliated texture, and much resembling ice in appearance. Sometimes, the animal bed, composed of a particular species of shell-bearing animals, in the first place decomposes, and, receiving within its composition carbonic acid, the first result is *chalk*; in after changes, the sulphuric acid, falling upon the mass, displaces the carbonic acid, and the result is gypsum. The stony points of some of the echinomedæ are generally the first to become converted into sulphate of lime.

Such is the primary material, and such are the combinations and causes of the effects produced under the head of sulphate of lime. Sulphurous gas is most extensively developed in the decomposition of oceanic bodies deriving its origin therefrom, freely disseminated in and throughout the virgin soil; it attaches itself, or is attached, through the medium of other compounds, to lime, and other earths, and passing thence by transition into numberless bodies, in many of which its characteristics are for ever lost.

The earths of soda, or sodium, magnesia, or magnesium, are also extensively developed in the chemical combinations which naturally take place in these localities of the desert, on the first appearance of the oceanic matter above the waters, uniting or disseminating with, the acids, and gradually consolidating, as will be explained hereafter. The cause of action manifest on the older strata have not ceased, for in every stage of production, the material, and the like action manifest, must of necessity produce the like results. In those extensive portions of the earth, spreading over some thousand square miles, many of the phenomena of older strata are not yet manifest, and, on the other hand, the infant productions are many of them peculiar to the soil and the climate; gypsum can be formed in vast aggregates only by peculiar local action, manifest in local accretion—thus the phenomena is local, and not general; volcanic action would decompose this and limestone rocks, by abstracting the sulphuric acid of the one, and the carbonic acid of the other. Volcanoes are the ministers of destruction more than the agents of production, abrogating the works of Nature, and introducing confusion where order was most manifest; by their action within the earth, they separate rocks the most ponderable, transferring their atomic particles, commingled with the wreck of innumerable bodies, from the interior to the surface of the earth, there to undergo new changes and vicissitudes of change.

The changes manifest in desert soils, where, undisturbed by alumina and other terrestrial products, are such as characterise oceanic matter; thus, for instance, the oxygen of the atmosphere falling upon lime and water, the NOBLE OPAL is produced! but when the terrestrial product, alumine, is united with the above, with iron as common to both, the result is WHITE OPAL; the alumine omitted in this admixture, the result is YELLOW OPAL. Again, in the union of the carbonates of lime, magnesia and iron, in definite proportions of each, prismatic magnesian spar is produced. Magnesia, in union with carbon, forms dolomite, but, in order to produce the result, constant and intense atmospheric heat is requisite, with little moisture. Soda, united by sulphuric acid, which forms the common basis of the atomic particles, the result is sulphate of soda; with carbonic acid, it becomes natron, crystallised, fibrous, or massive, investing or efflorescent, as local action and union may determine; which lime and alumina constitutes a portion of the material, the result is variably manifest, as natrolite, calcilite, &c.

GEOLOGY—A NEW SYSTEM OF PHILOSOPHY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I observe that you have, of late, opened the columns of your Journal, pretty widely, to some idle and ill-written speculations, regarding the origin, formation, and constitution, of the earth, which the writers choose to dignify with the title of Geology; among the rest, to the lucubrations of a Mr. Montague, entitled "Geology—A New System of Philosophy," with a continuation of which, also, your readers are threatened. But, if what is to come be no better specimen than what this gentleman has thought proper to afford us of his philosophical acquirements and pretensions, you might as well spare your readers the infliction of his incomprehensible farrago. As, for example—"Nature is truth!—The records of the past are in the hills, the mountains, the valleys, the plains—all are relics of past generations, decomposed, decomposing, or entirety—all speak one universal language, easily understood by all men—all attest the forming effects of local influences," &c., &c. If Nature be truth, this is not a true representation of Nature. If all speak a language easily understood, this writer himself seems to give proof that it may be much easier to speak than to write, intelligibly. Again—"Nature, in her changes, acts by innate causes, and not by certain unerring preconcerted rules—matter and motion, at all times, determine the result."—"It is impossible to presume that Nature is guided in the result by design manifest." And he prates about the operations of what he calls "concurrent causes" effecting great things, "the leverage of science," &c., &c., as if his writing were not unintelligible enough without the use of words unwarranted by an English dictionary, or by common sense. Further—"It is assumed, by modern geologists (I believe modern geologists often assume what they ought rather to prove, and what they cannot prove), that all the causes at present in action were so previous to the appearance of man upon the earth. The causes of effects primarily produced are ever varying; as production advances, many primary qualities become neutralised, or are totally lost, and new qualities and compounds are produced. The appearance of man on earth has caused no material alteration in the progressive advancement of production."—"The relation of man to this planetary body is the same as that of animals," concluding with some of the common cant of Materialists. In a work of scientific interest and practical utility, as your Journal professes to be, such jargon should have no place, and surely the interests of it cannot possibly be promoted by such inconsistent, ill-digested, and atheistical trash, as the paper from which I have been now quoting.

February 5. M. WILSON.

[It will be seen, by a Notice to Correspondents, that we have submitted Mr. Wilson's letter to Mr. Montague—a course which we propose adopting on all occasions where letters may bear on the papers of that gentleman now in course of publication through the medium of our columns. The fol-

lowing observations may, therefore, be considered as that gentleman's note thereon.

NOTE TO MR. WILSON'S LETTER.

It is the misfortune necessarily attached to all writers on *natural* or *moral* philosophy, to assume that which they cannot prove, and to demonstrate truths, to embrace which is beyond the compass of ordinary minds: it is equally certain that ideas, derived from things manifest to the senses of the philosophic observer, may be unanswerably correct, although the conceptions derived from those ideas may be erroneous, for the human mind is an imperfect and fluctuating result, having no other guide to its decisions than its own powers, derived from ideas previously received, its powers increasing with acquisition—*Nature*, in her changes, acting by *innate causes*, and by *certain unerring rules*, the chances of acquisition and combination determining the result. Geologists are not exempt from this common misfortune, of assuming that which they cannot prove, other than by demonstration, nor can they, in numerous cases, be justly called upon to do so; but, at the same time, the field of controversy is open to all men, and the onus of disproval of their AXIOMS lies with those who enter the lists against them. On the other hand, if they do occasionally assume that which they cannot prove, they also prove many things which they do not assume to be truths, but which, when abstracted from the *hills*, the *mountains*, the *valleys*, and the *plains*, speak for themselves, in the silent eloquence of Nature, appealing to the evidence of the senses, and proving, beyond demonstration, that NATURE IS TRUTH. Language, as every day's experience testifies, cannot mark the boundaries of science, nor is the English dictionary the fulcrum on which the philosopher rests his leverage; changing with the fashions, the improvements, and discoveries of the day, it fluctuates perpetually, but in all its changes it still points out what is due, in courtesy, from man to man, and the wide distinction between *argument* and *abuse*.—H. G. MONTAGUE.]

BRAZILIAN COMPANY.—The directors having resolved to make a CALL of FIVE SHILLINGS per share on the Consolidated shares, the holders are requested to pay the same at the office of the company, on Thursday, Friday, or Saturday, the 3d, 4th, and 5th of March, between the hours of Eleven and Three o'clock. They are requested to leave at the same time their vouchers, that the instalment may be indorsed thereon. All shares on which the call may not be paid are liable to forfeiture. A report from the directors may be had at the office of the company, 6, Broad-street-buildings.—February 19.

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ROYAL POLYTECHNIC INSTITUTION, 309, Regent-street. —The directors of this institution hereby give notice, that they intend to award MEDALS for the following INVENTIONS:—

1. For a WORKING MODEL of the most improved LOCOMOTIVE-ENGINE, by steam or other power—a Gold Medal.
2. For the second best ditto—a Silver Medal.
3. For WORKING MODEL of the most improved MARINE ENGINE—Gold Medal.
4. For the second best ditto—a silver Medal.
5. For the best SELF-ACTING MUSICAL INSTRUMENT—a Gold Medal.
6. For the second best ditto—a Silver Medal.
7. For a MODEL illustrating the most improved PRINCIPLE of UNWATERING DEEP MINES—a Silver Medal.
8. For the best SUSTAINING GALVANIC BATTERY—a Silver Medal.
9. For a MODEL illustrating the most approved METHOD of RAISING ORES, &c., from MINES—a Silver Medal.

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In the distribution of these Medals, it is not intended to exclude inventions that have been patented. The Models to remain for Exhibition in the Institution for at least the space of one year after the Medals have been awarded, should the directors think proper to retain them. The Medals will not be awarded if the Inventions and Models are not considered to be improvements on machinery now made. The Models to be forwarded to the Institution on or before the 9th of May next.

January, 1842. R. J. LONGBOTTOM, Secretary.

MEETINGS OF SCIENTIFIC BODIES.
IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Statistical	4, St. Martin's-place	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Royal Medical and Chir.	53, Berners-street	Tuesday	8½ P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Zoological	57, Pall-mall	Tuesday	8½ P.M.
Society of Arts	Adelphi	Wednesday	7½ P.M.
Geological	Somerset House	Wednesday	8½ P.M.
Medico-Botanical	32, Sackville-street	Wednesday	8 P.M.
Royal	Somerset House	Thursday	8½ P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
Royal Society of Literature	St. Martin's-place	Thursday	4 P.M.
Numismatic Society	Somerset House	Thursday	7 P.M.
Royal Institution	Albemarle-street	Friday	8½ P.M.
Royal Botanical	Regent's-park	Saturday	4 P.M.
Westminster Medical	Exeter Hall	Saturday	8 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

*** The soirées of the President of the Geological Society (R. I. Murchison, Esq.) are announced to commence at his residence in Belgrave-square, on Saturday, the 26th inst.

PUBLIC COMPANIES.

MEETINGS.

General Steam Navigation Co. ... 69, Lombard street ... Feb. 22 ... 2.

St. Marylebone Joint Stock Bank ... [illegible]

[illegible]

CALLS.

[illegible]

DIVIDENDS.

Wicklow Copper Mines ... [illegible] ... Office, Dublin ... Feb. 14.

[illegible]

METEOROLOGICAL JOURNAL, 1842.

[illegible]

Wind S. and S.W.

[illegible]

CHARLES HENRY ADAMS.

THE LONDON GAZETTE—BANKRUPTS.

TUESDAY.—[illegible]

FRIDAY.—[illegible]

NOTICES TO CORRESPONDENTS.

We regret that we should have received so many complaints of not receiving the SUPPLEMENT, published with our last Journal, but the blame, in every instance, must rest entirely with the bookseller, or newsman, through whom the paper is supplied; a copy (which, it may be observed, was not attended with any extra expense), shall be forwarded according to the addresses transmitted.

Our remarks on the spelter manufacture, although in type, must stand over until next week.

"G. A." (Wellington street).—We cannot see that any good would result from entering into the arrangement recommended by our correspondent; due attention is paid, in every respect, to all such matters whenever the opportunity is presented, and considered suitable to the prescribed objects of the Journal, which, by-the-bye, is not of frequent occurrence.

Mr. "F. C.," *alias* "Bob Jackson," was certainly rather premature in even fancying he had cause to feel "disappointed" in our tardy insertion of his paper; the great pressure of important correspondence with which we have of late been favoured, (and with all due deference to him), the limited interest possessed by the solution of mining problems, compared with those excellent treatises, to which we felt bound to give precedence, is sufficient explanation for the course we adopted; we, however, shall always be happy to hear from him, and to give his favours the earliest possible attention.

"An Old Subscriber" (Swansea), who writes concerning certain "doings," seems so well informed on the subject as not to require any additional information from us, and we really do not think that the publication of his letter would afford any interest or gratification to our readers.

We have adopted that course with the letter of Mr. Wilson (inserted in another column), which we intend pursuing with all subsequent communications having reference to the papers now in course of publication through our columns, by Mr. Montague, of forwarding them to that gentleman, so that he may attach his comments thereon. We now repeat, what we have before stated, that we do not hold ourselves responsible for the opinions or assertions contained in these papers, which, we most distinctly wish to be understood, must alone rest with the author.

We have received a second paper from Mr. Hood, on the subject of the Combustion of Coal, which will be inserted in our next.

LECTURES ON CIVIL ENGINEERING.—Our report of Professor Vignoles's lecture delivered on Wednesday, the 16th inst., is necessarily postponed.

Erratum.—In Mr. Phillips's explanation of the manner of admitting water or steam on the engine for raising miners, inserted in our last, the word *dish*, which occurred once or twice, should have been *disk*.

Received—"N. V." (Holywell)—"R. J." (Birmingham)—"A Constant Reader."

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, FEBRUARY 19, 1842.

The Anniversary Meeting of the Geological Society was held yesterday, when the Address on the presentation of the WOLLASTON Medal, and review of the proceedings of the past year, was delivered by its talented president (R. I. MURCHISON, Esq.), in the course of which he passed a well-merited eulogium on the labours of those in the scientific field of research, to which the attention of geologists had been directed, as well as to the merits of those members of the society who had, during the past twelve months, been removed from this busy scene to "that bourne from whence no traveller returns." The anniversary dinner took place in the evening, when addresses were delivered by the first president (Mr. GREENOUGH) and the present, as well as the Russian Ambassador, Dr. BUCKLAND, the Marquis of LANSDOWNE, Duke of RICHMOND, and other influential members. We will endeavour next week to give a detailed account of the proceedings, with an abstract of the President's Address.

Parliament has met. The Corn Law question has been canvassed, and, although the session is too young to expect results to have arisen from the midnight meetings of the legislative assembly, yet we are glad to find that the sulphur mines of this country have not been neglected, even at this early period—Dr. BOWRING having moved for certain papers bearing on the negotiation and final settlement with the Neapolitan Government, as regards the breach of faith on their part, and the consequent injustice done to our mercantile and shipping interest. Whatever may be the ulterior object the honourable member may have in view, it is sufficient for us to observe, that the attention of Parliament is directed to the subject, which, once excited, must (at least, so we should hope and expect) lead to such commercial treaties, and understanding between the two countries, as will be protective to our mining interests at home, while they are based on principles of reciprocal advantage and fairness.

This question becomes one of increasing importance, as relates to the import of foreign sulphur without a protecting duty, when we find that a sale has been effected, within the past fortnight, at the rate of 65s. per ton, in Liverpool, whereas the current price for a lengthened period ranged between 10*l.* and 12*l.* per ton. As the sale to which we refer has had an influence on several parties connected with the sulphur districts (but which appears to us to be based on ungrounded *data*), we have taken some pains to elicit, from the best authorities, the relative positions of the sulphur mines of Sicily and those of our own country, and also gladly avail ourselves of the observations of a gentleman immediately connected with the sulphur trade, who has seen the ore lately imported from Smyrna, and on whose judgment we can fairly depend.

In the first place, then, it appears that 140 tons of sulphur ore were brought over to this country, and, after attempts at private sale having been made, was offered by public auction, in Liverpool, within the past ten days, when, there being no disposition on the part of the manufacturers to bid, the parcel was withdrawn at 4*l.* 10s. per ton. We are, however, informed, that, subsequent to the attempt at public cant, forty tons were disposed of at 3*l.* 5s., or, as another informant says, 3*l.* 8s. per ton—the lowness of the price being attributable to the desire on the part of the importers to get the article introduced, and next its inferiority as to produce, yielding not more than 60 per cent., and being too freely mixed with the *gangue* or rock and earthy matter. That the ore could be raised, and transported to this country, at 3*l.* 5s. per ton, is too absurd for a moment to reflect upon, and, with the view of comparing the value and cost of our own produce with that of Sicily (for we leave the imports from Smyrna out of the question), we will take facts and figures as our bases, and leave to our readers to form their own deductions.

It is now some months since that His VOLCANIC MAJESTY was compelled, sorely against his will, to annul the compact entered into by him with TAIX and Co., whereby a heavy stock of sulphur was thrown on his hands. His MAJESTY had been previously in receipt of, or, at least, had, the *quid pro quo*, to the extent of 4*l.* 10s. per ton; but having been obliged to return to honest dealing, and wanting money, he entered into arrangements with a house to whom he sold the stock of some tens of thousands of tons at a price 50 per cent. less than that which the article had commanded during the term of the illegal contract. The consequence, as might naturally be expected, was the decline in price of from 11*l.* to 12*l.* per ton to 6*l.*, and the market being deluged with Sicilian sulphur. The high price to which sulphur had been raised by this underhand agreement between His SICILIAN MAJESTY and TAIX and Co., led to the exploration of mines in this country, which were known to abound with pyrites, and, accordingly, it having been found that they could be rendered at a price comparatively less than foreign sulphur, operations on an extended scale were undertaken, the result of which is, that at the present moment the county of Wicklow, in Ireland, can produce 80,000 tons per annum, averaging 40 per cent., or equal to 32,000 tons of Sicilian sulphur, which is nearly the quantity annually imported, within the past few years, into this country. This, we may observe, is independent of the resources of Cornwall, Wales, and other parts of Ireland, where sulphur ores, or pyrites, are found in abundance, although not so advantageously situated for transport, or obtained so readily, the lodes, in the county Wicklow, in some cases, being thirty feet big, and worked at a cost not exceeding 4s. to 5s. per ton, dressed at surface, including all expenses, excepting water charge and agency—of course, exclusive of tutwork.

We may here remark, that the old stock of Sicilian sulphur is diminishing considerably, while prices are looking up, and the shipments very scanty. Of the 2000 tons of Sicilian sulphur in stock at Liverpool, some two or three weeks back, 1250 tons have been sold within the past fortnight, and the price has advanced, as will be seen by the quotations, despite the *influx* of Smyrna ore, to the vast extent of 140 tons, of which nearly one-third has been sold, so as to realise one-half the price of Sicilian sulphur, and rather more than double that of Wicklow ores—a happy medium, which will, doubtless, allow them sufficient to cover land carriage, freight, and agency, and leave the adventurers to pay the cost of raising. As evidence of the state of the sulphur trade, as regards the supplies from Sicily, we may further observe, that the total imports to Liverpool, from 31st December to 15th inst., amounted to only 356 tons—the quantity we formerly imported may be taken at 36,000 tons per annum, or 3000 tons per month, whereas the imports during the present year is at the rate of 240 tons per month, or one-twelfth. This should in itself be encouraging to our home miners, although prices, for the moment, be depressed.

With the view of enabling our readers to arrive at a correct conclusion of the advantages which our home mines possess, in comparison with those of His VOLCANIC MAJESTY, and, as an inducement to parties interested to progress rather than to relax (to which latter course the present depressed prices might lead them) we propose submitting the cost at which, we believe, the article of home or foreign produce may be rendered. We will first take the foreign, or Sicilian sulphur, and which, as we have already observed, after reaching the *maximum* price of 14*l.* per ton, has been suddenly lowered to 6*l.* per ton—the cause of which depreciation has been already shown. It is for us, then, to inquire, whether the low price we have quoted (although there has been, of late, a slight reaction) is likely to continue, as on that question hinges the prosperity of the sulphur mines of this country. The following, we understand, to be the charges attendant on the import of Sicilian sulphur:—

	£	s.	d.
Cost of raising, dressing, and land carriage (twenty-one miles)	£4	0	0
Export duty	1	15	0
Freight	1	15	0
Import duty	0	10	0
Commission, shipping, and landing charges—5 per cent.	0	8	0
	£8	8	0

Thus, it would appear, if our *data* be correct, that the cost of Sicilian sulphur, in Liverpool, so as to be remunerative to the miner, after paying export and import duty, freight, cost of transport, and other charges, is 8*l.* 8s. per ton, while the market price is 6*l.* 5s. to 6*l.* 15s. Let us now turn to our home mines. The present price of Wicklow sulphur ores, delivered at Liverpool, is 25s. per ton, 3 tons to 3½ tons of which we will assume as being equal to one ton of Sicilian sulphur; this would give to the manufacturers the article, in its rough state, at 4*l.* 7s. 6d. per ton, but calculating on advanced prices (for the present will not cover the cost), we may take the following estimate:—

	£	s.	d.
One ton of sulphur ore at the mine, including all charges	£0	18	0
Land carriage to Wicklow	0	4	6
Freight	0	5	0
Shipping charges, commission, dues, &c.	0	2	6
Cost per ton, delivered at Liverpool	£1	10	0

Assuming that only 28 to 30 per cent. be extracted from the ore, we should, in this case, be able to render to the manufacturer an equivalent to Sicilian sulphur at 5*l.* 5s. per ton. We must not, however, lose sight of the possibility of the export duty on the part of the Neapolitan Government being entirely removed, in which case the rate at which the article could be imported would be 6*l.* 13s. per ton, which leaves the margin less wide, and should stimulate those interested in our home mines to press on Government the consideration of a protective duty, more especially when we reflect that the impost of 4*l.* 10s. per ton was continued by His VOLCANIC MAJESTY until compulsory measures were resorted to on the part of our Government, whereby the manufacturer and consumer were relieved. The question, once brought fairly under notice, cannot fail of receiving attention.

SIBERIAN GOLD MINES.

Whilst the gold mines of Brazil and Spanish America appear to be yearly falling off in their yield, those of Siberia, on the contrary, are yearly producing more. Nature (says a Russian report) has showered gold in abundance on the soil of Siberia. The eastern part of that vast country is remarkable at this time for its riches in the precious metals. The sands of the rivers there show the presence of gold in their beds from the surface, in many places for many tens of square versts, as for example in the river Grand Birussa, on the borders of the governments of Yeniseisk and Irkoutsk, and in the basins of the Tounguska superior, of the Oudérei and the Pite, which water the first of those governments. From the savage country it used to be, Siberia has become the realm of gold; its riches may now be accounted such, although the road to them has been paved with silver, it may be said, and made good by persevering industry.

The exploitations of the gold mines have been chiefly extended by private adventurers from the example of those worked by the Crown. Excepting the districts belonging to the imperial mines of Kolyvano-Voskresensk and Nertschinsk, or the country situated beyond the Baikal, the adventures of gold mining, and the search for veins of gold, in all the rest of Siberia, have been surrendered to private enterprise on certain conditions. For a long time the speculators searched fruitlessly in the deserts of that vast country, and lost their capitals and their health; but at length Nature yielded to the perseverance of man, gold was discovered, and its working commenced in 1829. From this date it is curious to observe the rapid development of private (alone) gold mining in Siberia, according to the following official statement:

	Poods.	Livres.	Zolot.
In 1829	1	10	11 48-96
1830	4	22	39
1831	4	4	2 18-96
1832	15	37	40 72-96
1833	20	29	81 93-96
1834	33	25	56 36-96
1835	73	19	18 12-96
1836	84	30	9 18-96
1837	106	10	17 58-96
1838	166	22	11 60-96
1839	189	19	85 74-96
1840	211	30	40 40-96
Total of the 12 years	912	1	12 79-96

Upon this quantity the Crown has received, by way of quit rent, 137 poods of gold, and the remaining 775 poods remained the property of the speculators. The pood, it is useful to observe again, is equal to rather more than 36 lbs. British avoirdupois weight.

Thus in ten years the production has increased from 1 to 212 poods per annum, from private enterprise alone. But, in fact, the year of gold mining consists of the four months of summer only, during which the washings of the gold sands and the extraction of gold takes place in Siberia, and particularly in its eastern parts; and it is proper to notice that all the workings were conducted by people of no experience in that branch of industry, in a country altogether unknown, covered with thick forests, impenetrable morasses and mountains, where no trace of the passage of man could be found, and where savage hunters had scarcely ever set foot.

The year 1841 will, however, it is said, furnish a more irrefragable proof still of the immense mineral wealth of Siberia. Private enterprise will have extracted from it nearly 100 poods of gold more than in 1840. In this amount will be included for nearly 33 poods from the deposits discovered last year by the trader Mjasnikoff, the working of which has not employed more than 300 labourers. "What other industry (says the report) can, with 300 men only, produce in the space of four months only, to the amount of 50,000 silver roubles of a substance which is of never very varying demand and value?—The silver rouble, it may be noticed, is equal to about 3s. 2½d. sterling. —At present the adventurers confine their enterprises to the gold to be found among the sands of the rivers, and so long as they are successful they are likely to carry their researches no farther. But the question arises, and the solution will some time or other be sought, from whence do these golden sands derive? When the river workings, which may suffice for the present age, fail, it is probable that more extensive researches will trace the mineral original treasures of Siberia to their source.

ORIGINAL CORRESPONDENCE.

SPELTER MANUFACTURE—BLACK-JACK.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I must confess I was much disappointed in reading "H. E.'s" letter, promised by you some week's since, to be a regular "illuminator" of the subject, in your paper, headed "Spelter Manufacture—Black-Jack." From former reminiscences, I was not surprised at its prolixity, but was so from its lack of applicable matter. The total of his effusion amounts to this—"I am an advocate for benefitting the black-jack miner, by extending the make of English spelter," but, "as an increased make would lower the price, and as it can be made abroad for 18*l.* (formerly he stated 14*l.*, which is nearer the mark), and the present prices must come down this year, don't attempt it, but wait for an improved plan I have in view, to make it cheap and good, and, probably, rollable," in which case all these buts would be thrown overboard, by his philanthropy for the poor black-jack miner.

We all know assertions are no proofs; but, of the former, "H. E." is most unsparing—time will develope all, and, as I said before, we have waited since 1839, and can still wait the "proof" as to this new—being an improved—plan, as to cheapness, quality, and ductility. Some of "H. E.'s" assertions I regret, because they are personally injurious, and ill-founded; and, however they may tell to ground an argument on, ought not to have been advanced—first, that the rise was caused by speculators; and, next, that, although "one or two houses" had secured the make for the next six months, to uphold the price, yet that not only it could not be maintained, but that—22*l.* to 26*l.* being a "fair" price—it would recede to that "before the close of the current year." I could easily disprove all this as incorrect and unlikely, but, as I am not writing for or against a market price, I shall abstain from saying more, than that a body of well-informed mercantile men do not generally, and simultaneously, act on false data; these data did exist, and will continue, until more spelter, that will roll, is produced than we have had, or can get, from abroad. When these causes cease, and stocks exist beyond consumption, the natural result must be a fall in prices—meantime, the common forethought for rise or fall of mercantile men, should not bring them within the charge of being mere speculators, and their motives be injuriously and publicly impugned.

I come now to some of "H. E.'s" "facts." I cannot understand the necessity urged of a "reduced" make; the exemplification of the iron trade reduction of make is totally inapposite and uncalled for. The demand for home consumption, "H. E." says, is 5000 to 6000 tons annually—the make in England being about 1000 tons; surely, here is margin enough for extension, with 2*l.* protecting duty, if it can be made cheap enough, and of the required quality, but, assuming even that the brass of this country requires only 1500 tons spelter, there is still a margin for 500 tons more—at the *minimum*, of course—without even reference to Muntz's yellow metal, the patent for which, I understand, "specifies" to be made from "foreign" spelter, and without taking into consideration the brass wants of all other countries. The argument, that because spelter can be made for 18*l.* to 20*l.*, it "must" be sold at a "fair" price of 22*l.* to 26*l.*, is not a tenable mercantile position; every one gets as much as the state of the demand will justify when the make is short; the leading feature at present is the price of the foreign production, nor will the English maker be content unless he gets a corresponding one, and should, from any causes, the prices fall abroad, he must succumb to the same, until an absence of all profit obliges him to cease to make. It is a dangerous competition, at present, between this country not making under 18*l.*, when the foreigners have sold, delivered in bond in this country, as low as 9*l.* 5*s.* As regards "possible improvements," I never denied them; I only contended, from the nature of English ores, there was great difficulty, for (unlike "H. E.'s" other examples), to the steel iron now made in this country, you have to add chemical ingredients, with a margin of price from 6*l.* to 36*l.*, whereas, with blende, you have to get rid of a semi-metal, highly volatile, in a state of connection with a metallic oxide equally volatile—in short, to meet the fluctuations of spelter, and compete with the Germans in case of a fall, you must have cheapness, to extend the make for general brass purposes, and equal ductility, to justify such an extension as would make it an important trade.

As to the "Black-Jack Miner" of the Isle of Man, he is a real "man" of that isle—sticks to his point right or wrong. I am totally uninterested in keeping down the price of blende, and, not denying the large profits the English spelter maker may be now making, and which he has enjoyed about one year in this very precarious trade, I can only advise him not to part with his black-jack for a less price than he can obtain, and wait, if he likes, for the demand which is to be created by the "new improved process."

London, Feb. 10. A. B.

[Some remarks on this communication will be found in another column.]

THE "STANDARD."

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I beg leave to apologise to you for being a means of disseminating that palpable error in my last communication of the 15th ult. I cannot account for it in any other way than this—In the hurry of transcribing, having multiplied 92 tons by 5½, on a detached scrap of paper, and copying therefrom, must have changed the place of the figures, at the commencement of the working out of the proposition. I thank your correspondent, "E. T.," for calling my attention to it, in your Journal of the 5th instant. It is quite evident, to all who pay the slightest attention to the workings, that they will discover that the figures are misplaced; the 7 is put foremost in the group, instead of 4, and *vice versâ*, and 4 in the middle in place of 7, which evidently caused the blunder in the finding the average produce, and, consequently, missing the right standard. This, however, does not at all militate against the rule laid down in the paper referred to, nor will it derogate from the method there suggested. Your correspondent, "E. T.," justly observes—"notwithstanding this error (noticed above), it does not at all interfere with the principle so clearly elucidated," which was the principal thing I aimed at, in furnishing you with the often solicited direction for making out the standard.

Hewal Suly, Feb. 10. SAUL PISINN.

ON THE APPLICATION OF ANTHRACITE TO THE MANUFACTURE OF IRON.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—The successful application of anthracite to the manufacture of iron is a subject of paramount importance in the mineral district of which this place may be considered the outlet. Manufacturing operations not having as yet commenced, it appears to me to offer an excellent opportunity for the establishment of improved methods of working, such as seldom occur, and which it would be lamentable to see thrown away. As I take a deep interest in the subject, I trust I shall be excused for using the freedom of making a few remarks upon smelting iron, and the application of the blast, because in the latter, where anthracite is used for fuel, I am confident that, as yet, all the advantages to be derived, in a pecuniary point of view, from its use, have been wasted by the expensive mode of application. I am ready to admit the efficacy of the present mode, and the excellence of the iron so smelted, but feel satisfied similar results are to be arrived at with infinitely less original outlay of capital and of current expenditure. I am amused with a letter from Mr. Brough, which appears in the *Mining Journal* of the 12th instant, wherein he gives a solemn warning to those who embark in this comparatively new enterprise, to have their blast apparatus so powerfully constructed as to force in enough of the attenuated hot air to supply the atomic quantity of oxygen due to this highly carbonaceous and remarkable fuel. In reply to the concluding remarks in the letter, I beg to state that I am quite certain that none of the melancholy results which surround Mr. Brough can be attributed to a deficiency of power in the blast apparatus made use of, or provided for, in any of the new establishments formed for the manufacture of iron with anthracite. Hot air is by no means necessary for the perfect combustion of anthracite, but, to a certain extent, it becomes so when used for smelting iron, to prevent the chilling effect of cold air upon the fusing earths and iron, the peculiar structure of anthracite not affording that protection which coke does. Air may be heated to a much higher temperature, and at much less cost, otherwise than by forcing it through red hot iron pipes, and, provided the requisite quantity can be sent through the furnace in the required time, the pressure, or pillar of blast, is of no consequence whatever. It is some time since I satisfied myself upon this point, and am glad to find Mr. Rogers publishing the same opinion. The readers of the *Mining Journal* ought to feel themselves under an obligation to that gentleman for his valuable papers on the management of blast furnaces, written in a lucid and clear style, without the too frequent mystification used in such matters. He states that in his neighbourhood (Nantyglo), from some recent trials, a much lower pillar of blast than 2¼ lbs. per inch has, with large tuyers, produced very superior work. By reducing the resistance, which the peculiar structure of anthracite opposes to the passage of the blast through the furnace, as large a quantity of air may be driven through by a comparatively small power as is now done with engines of extraordinary capacities. A slight alteration of the furnace will effect this, and, at the same time, the necessity for high furnaces be obviated. T. H. LEIGHTON.

Llanelly, Feb. 15.

ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—We have a coal-pit, into the workings of which an irruption of water has lately taken place from the upper strata, and which, although not very great, as to quantity, yet, from the nature of the situation, is very troublesome and expensive, leading away with horses, &c., and is likely to continue; I would, therefore, beg the favour of some of your skilful and scientific contributors, to lend me a helping hand in this matter, by directing, from the data following, which is the best and cheapest way to proceed in its removal from the works? The water produced is about 360 gallons per hour, and from the point, or reservoir, where it is collected, near the workings, to the nearest point of discharge (or teeming place), is 1837 links, or 1212 feet, all the way up an inclined plane, whose perpendicular height is forty-five feet. If a pump, or pumps, are advised, I request to know what size is most proper, both for the pipes and the pumps, to be used; and what the necessary working power? And, also, what I may expect as the useful mechanical effect produced, in proportion to the power expended? and these founded on data ascertained by the best known experiments on the friction of water in pipes, and the friction of the best constructed pumps (whether forcing or suction pumps). I beg also to say, that the water being situated nearly half a mile underground, from the bottom of the pit, any idea of attaching the winding-engine to apparatus for its extraction, is, I apprehend, inapplicable. BOB AT A PINCH.

Wingate Grange Colliery, February 8.

ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—In my attempt to solve "A Miner's" question on mine surveying, inserted in your last Journal, in all the distances for *feet* read *fathoms*. A CORNISH MINER.

Breage, Feb. 14.

ON THE COMBUSTION OF COAL AND THE USE OF HOT AIR IN FURNACES.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I beg to make some observations on the letters of Mr. Williams "On the Combustion of Coal, and on the Use of Hot Air in Furnaces," which have appeared in your Journal of the 29th ult. and the 5th inst. In the former of these Mr. Williams considers that I have attributed to him the opinion that "the same quantity of air is required to consume the gaseous products of coal at all periods of its combustion"—not from what he has himself said or written on the subject, but from what others have erroneously attributed to him; this, however, is not the case. I founded my opinion upon his own letter, published in your Journal, in which he says—"But I am asked, when is the time, and what are the circumstances under which a regulating air admission valve would be necessary, and when there is no combustible gas requiring such air?" I answer, "there is no such time, and there are no such circumstances; for, in proportion as the carburetted hydrogen is evolved and consumed, the fire becomes clear, and this carbonic oxide gas is generated, demanding, in its turn, the same quantity of oxygen as went to the formation of the carbonic acid gas, from which it is produced, so that the whole of this ingenious absurdity of the cold air actually doing mischief, by alternately expanding and contracting the metal plate of boilers, is shown to be a great chemical and practical blunder." It certainly appeared to me that, by this paragraph, Mr. Williams very decidedly stated his opinion that the same quantity of air was required at all periods of the combustion—an opinion which I have shown in my letter, published in your Journal of the 22d January, to be erroneous. Unless Mr. Williams will explain what he means by the above paragraph, I must confess myself unable to attach any other sense to it than the one I have stated.

I will now proceed to the subject of Mr. Williams's lecture at the Victoria Gallery, to which he refers for an exposition of his views on the injurious use of hot air in furnaces. I must apologise for the length to which my observations will probably extend; but Mr. Williams pointedly alludes to my opinions on this subject, and the present appears to be the proper occasion for stating my objections to what he has advanced on this subject. The courtesy of his expressions towards myself, on that occasion, I desire to reciprocate, while I request his attention to what I would urge against his theory.

I proceed to the several points for consideration, in the same order in which they occur in Mr. Williams's lecture. It is objected that it is not necessary to heat the air before it enters into the furnace to support combustion, because a fire burns better in frosty weather, and a gas light burner receives the air which supports combustion at the common temperature. Mr. Brande is quoted as stating "the colder the air the greater will be its effect on combustion." This is evidently only a small part of some sentence, of which it is necessary to know the remainder before we can judge of the meaning to attach to it. Sir Humphrey Davy's elegant experiments on combustion, show that mixtures of gases, uninflammable at common temperatures, when the electric spark is passed through them, inflame more readily in proportion as they are heated more highly; and I have never yet met with any one, except Mr. Williams, who denied the necessity of the air being heated before combustion could ensue. The different colours which the flame of a candle, or lamp, exhibits at the base and at the summit, is caused by the deficiency of heat at the lower part of the flame, in consequence of the current of cold air passing upwards. The non-combustion of a gas-light, until it has passed a certain distance from the holes of the burner, arises from the same cause, and this distance diminishes as the metal of the burner becomes heated. The same occurs in every case of combustion, the air being heated at the expense of the combustible, unless it be heated extrinsically.

The objection urged against the increased bulk of hot air, to obtain the same number of atoms of oxygen, is likewise invalid. If the objection were good, it would have far more importance than even Mr. Williams attaches to it, for the expansion of air by increased heat is much greater than he supposes. Mr. Williams takes the expansion of air to be equal at all temperatures—viz., $\frac{1}{480}$ of its bulk for each degree of Fahrenheit. This rule makes one volume expand into three volumes, by increasing the temperature from 60° to 1020°—equal to an increase of 960°. Air, however, does not expand *pari passu*, for equal increments of temperature. The rule for its expansion (Dr. Gregory's *Mechanics*', vol. i., p. 486), supposing it expands ·376 by 180° of temperature, is—

$$(1{\cdot}376)^{\frac{1}{180}} \times (1{\cdot}376)^{\frac{x}{180}} = (1{\cdot}0018) \times (1{\cdot}376)^{\frac{x}{180}} = V;$$

in which equation x is the required temperature, and V the volume the air acquires at that temperature. Mr. Davies Gilbert, Mr. Sylvester, and other mathematicians, have likewise given formulæ for the calculation, which make the expansion a trifle higher than Dr. Gregory. Now, if we take the value of x at 960°, we shall find that one volume of air becomes 5·49, instead of three, as Mr. Williams states; and, though this apparently makes his argument the more forcible, truth requires it to be stated, and the more so, if the argument really possess any weight. But, let us see what is the effect of highly rarefied air. Sir Humphrey Davy introduced a small jet of hydrogen gas (Priestley's philosophical candle) into the receiver of an air-pump, and he found the flame enlarge in proportion as he exhausted the air, and it was at its maximum when the air was exhausted to one-fifth of its original density. By increasing the size of the jet, the flame burned longer, even when the air was exhausted to one-tenth, and this he found to arise from the increased heat by the larger burner, the flame only ceasing when the exhaustion was carried so far that the heat was insufficient to keep up the combustion, even in air so highly rarefied. Dr. Ure, with reference to these experiments, observes, that "those combustible bodies which require less heat for their accension, ought to burn in more rarefied air than those that require more heat, and those which produce much heat in their combustion ought to burn, other circumstances being the same, in more rarefied air than those that produce little heat." But, when Sir H. Davy heated the gaseous mixtures before combustion, he found "that expansion by heat, instead of diminishing the combustibility of gases, on the contrary, enables them to explode apparently at a lower temperature, which seems perfectly reasonable, as a part of the heat communicated by any ignited body must be lost in gradually raising the temperature." Sir H. Davy also ascertained "that the cooling power of mixtures of elastic fluids, in preventing combustion, must increase with their condensation, and diminish with their rarefaction; at the same time, the quantity of matter entering into combustion, in given spaces, is relatively increased and diminished. The experiments on flame, in rarefied atmospherical air, show that the quantity of heat produced in combustion is very slowly diminished by rarefaction, the diminution of the cooling power of the azote being apparently in a higher ratio than the diminution of the heating powers of the burning bodies." And he likewise concludes, "that, at high temperatures, gases not concerned in combustion will have less powers of preventing that operation than gases at the common temperature of the atmosphere." Sir Humphrey Davy's "Researches on Flame" (*Philosophical Transactions*, 1817) and Dr. Ure's *Dictionary of Chemistry* (article "Combustion"), afford abundant evidence of the advantages of heated air in all cases of combustion; and I think Mr. Williams would find the perusal of these works would correct several erroneous opinions he entertains on this subject, and that he would no longer consider these views contrary to all chemical authorities. Sir H. Davy, in particular, has stated "that the combustibility of all gaseous mixtures is increased by rarefaction by heat" (*Quarterly Journal of Science*, vol. ii., p. 463); and, in fact, almost endless quotations might be made in favour of this view of the subject. The extract given by Mr. Williams, from Dr. Ure's letter, by no means contradicts this opinion. The expression, "frosty air, on entering your furnaces through the small apertures, undergoes a very sudden and great expansion, which must tend to promote the mixture and diffusion of the air and the gases, by the agitation thereby occasioned," clearly proves that the Doctor considers this expansion (by heat) necessary, before the air mixes with the gases, and that this expansion of the air is caused by the heated materials of the furnace, in "passing through the small apertures." This is precisely the principle of supplying heated air to furnaces, for no one, who is acquainted with the subject, will deny, that frosty air, when thus heated, supports combustion better than air at a summer temperature; because, there is less hygrometric moisture in the former case than the latter, which very materially affects combustion. There is also another reason why frosty weather makes a furnace burn better than warm weather—viz., the influx of air to the furnace is greater, owing to the greater difference in weight between the internal and external columns of air, as explained in my letter in your Journal of the 15th January.

The extracts above given are principally from Sir H. Davy's papers "On Flame," published in the *Philosophical Transactions* of 1817, and which papers are so replete with information on this subject, that their perusal can scarcely fail to convince any person who carefully studies them, that the principle of supplying heated air to furnaces is both practically and theoretically correct. I now come to Mr. Williams's letter, in your Journal of the 5th inst. And here I cannot but remark, that if Mr. Williams felt surprise, as he states, on reading my letter of the 29th ult., my surprise is not less at the tone and manner of his present letter. Up to the time of this letter, Mr. Williams's manner of stating his opinion was sufficiently courteous to be unobjectionable. Nay, he even discovered that his opponent was "one who is familiar with the chemistry of combustion;" "a gentleman who is a more worthy supporter of the hot air principle in preference to others;" and "an acknowledged chemical, and, I believe, practical authority," &c., &c. But in one week "a change came o'er the scene," and this same individual is metamorphosed into "a rash youth," and "not a scientific man really in search of truth;" an "unworthy quibbler," one who "blunders" most egregiously, and exposes his ignorance most pitiably. What an extraordinary change in one short week! Can any cause exist which will explain this change, some one may ask? The cause is a very small one to produce such an effect—a mere spark thrown into the magazine—it only consists in the change of two letters, *meum* for *tuum*. In all my former letters I merely replied to Mr. Williams's observations on my own opinions and writings; in my last letter I stated my opinion of *his* writings, and it is not a little remarkable, that a gentleman who can write with so much calmness when discussing, what he considers, the errors of others, should be so excessively sensitive when his own errors are pointed out, that the *langage des halles* is scarcely more vituperative and violent than are the expressions in which he states his objections. But let me ask what Mr. Williams has to complain of? In reviewing his work I employed precisely the same style and mode of expression that was used in the review published by Mr. Williams upon my essay. This, then, of course, he cannot object to. The number of errors pointed out was similar in both cases; this, therefore, must be unobjectionable. And the only difference between the two is, that those errors pointed out as belonging to my work, have no existence whatever, as I never stated what was attributed to me; while in my review of Mr. Williams's work I quoted his own words, in order that there might be no mistake. Mr. Williams quotes a letter of Dr. Kane, in which he states, he sees no material difference between the essay and the abstract of my paper. I never stated there was any, except that a short abstract must necessarily be imperfect. But, if Mr. Williams (or Dr. Kane) will point out where those opinions, which he has attributed to me, are to be found in my essay, I shall be perfectly satisfied that his view of it is correct; but until he does that, or until he retracts what he has written of it, he must not be surprised if I, in defending my opinions, find it necessary to show what value his own should bear. I cannot, however, do an injustice to any man; and I, therefore, feel bound to acknowledge (although I have not got Mr. Williams's book at hand to refer to) that the third error I pointed out has been satisfactorily explained by Mr. Williams, and that it is either a typographical error or a misreading. The others I see no reason to alter my opinion of, and I shall, if needful, recur to them, and some others, at a future time. If Mr. Williams wishes to continue the discussion in the same manner as in his last letter I have no objections—*suaviter in modo, fortiter in re*, is my motto—I offer him the olive branch—I shall lose nothing if he reject it. At the same time, I would suggest to him as a man of the world, and with much opportunity for studying mankind, that it might, perhaps, be more politic in future for him to hide with greater caution his vulnerable point, for when any one has made so free with the opinions of others, as he has done, there are seldom wanting those who will avail themselves of the knowledge thus obtained, to cast the javelin where it is most likely to take effect. *Hæret lateri lethalis arundo.* CHARLES HOOD.

Earl-street, Feb. 9.

ON RAILWAY ENGINEERING.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Since the recommendation of the jury, which sat on the bodies of the unfortunate persons who lost their lives through the accident on the Brighton Railway, near Cuckfield, to discontinue four-wheeled locomotive-engines, enough has been written on the comparative advantages of four and six-wheeled engines to fill a volume; but the question, whether with a perfectly level road, and barring the breaking of axles, either description of engine would not be as safe as the other, has, I believe, been overlooked, or only touched on as of secondary consideration—indeed, one of the most elaborate writers on the subject has admitted, that, with such a road, the matter would be at once deprived of the importance attached to it. Why, then, permit me to ask, have we not such roads? Are we so deficient in practical science as not to be able to make proper roads? or will it be alleged that the powers of man are inadequate to the task? Whatever answer is returned to either of these questions, the subject, be assured, must, sooner or later, force itself on public attention; for "maintenance of way," arising out of the want of proper roads, is a title to an account which ought not to be found in the ledger of any railway company whatever.

When my letter, inserted in your *Journal*, on the subject of the last accident on the Great Western Railway was written, I had not seen the account in the *Times* of the fatal accident on the Chesterfield Railway, occasioned by the breaking of a wheel, and which, though happily fifty lives were not thereby sacrificed, was an instructive commentary on the contents of that letter, especially as neither of the publications, essentially devoted to the interests of railway directors, ever made the least mention of the sad occurrence. A writer in one of these periodicals, who has an itching for making discoveries of phenomena and phenomena in railway science, and who has lately returned from a tour of inquiry respecting four and six-wheeled engines, having entertained his readers with some curious reasons why longitudinal bearers occasion more draught than cross sleepers, an investigation of the matter seems somewhat necessary. The writer was informed by a Mr. Gray, an engineer on the Hull and Selby Railway, that "the difference in draught in hoar frost and wet wea-

ber was 50 per cent. or more against longitudinal bearers; indeed, the when the engine could with difficulty draw its load upon a level over longitudinal bearings, it would trip up easily enough a rise of fourteen or sixteen feet a mile where the rails were laid on cross sleepers." This startling proposition (for such only can it be considered till the alleged facts are established "by the test of accurate experiment") is followed by an attempt to explain the causes which produce so extraordinary an effect. They are these:—1st. That, at night, the ground is not so cold as the atmosphere; that wood being, comparatively, a non-conductor of heat, the rails laid thereon their entire length cannot have imparted to them the higher temperature of the ground, and therefore the dew sooner settles and freezes upon them; whereas, on cross sleepers the rails have communicated to them the temperature of the ground, or ballast in which, to within an inch or two of their surface, they are imbedded, and "hence," says the writer, "the whole of the phenomena of heavier draught, arising from longer and greater slipperiness upon the longitudinal; and, perhaps, at times of their being slippery, when the [rails on the] cross sleepers are wholly dry and free from hoar frost."

Here is an assumption founded on a supposition, which, of course, leaves the matter where it was. If part of the rails had, on the same ground, been laid on transverse sleepers, and part on longitudinal bearers, and the writer had discovered the rails on the former to have been free from hoar frost, while those on the latter, in the same identical locality, were covered all over with it, it might have been inferred that the effect was assignable to the alleged cause; but no evidence of such phenomenon is furnished, and as wood is of a warmer nature than earth, and as it is not easy to conceive that in any night, "when the whole surface of the vegetable country was covered with a thick and hard hoar frost, and the stagnant water with thick ice," any warmth could be imparted from the ground to the rails, whether resting on cross sleepers or longitudinal bearers, we must look elsewhere to ascertain why dew should deposit itself and freeze quicker on iron rails laid on the latter than when laid on the former, if such be really the fact; indeed, to believe that frozen ground—yes, and frozen hard too—imparts to iron such a degree of temperature as would prevent water freezing on it, is impossible, though it is easy enough to conceive, when a man goes out on a voyage of discovery, that he may fear being laughed at if he returns as he went, and that, therefore, he may deem it better to find a mare's nest than nothing at all. If such a degree of warmth is radiated from the earth to prevent water freezing on iron laid on it, or with which it communicates, surely that same degree of heat would prevent the surface of the earth freezing also. If I could enter into such nice and delicate questions and calculations, I should feel inclined to think that the higher temperature of the atmosphere, by day, would have such an influence on a body of wood, especially fir, as to constitute it at night a warmer seat for iron than earth or ballast would afford, and that, consequently, iron would not freeze so speedily on wood as on the ground. As wood is a slow conductor of heat, so probably it retains it the longer when imbibed; and as its nature is, I believe, to resist cold, perhaps in the same ratio as heat, this consideration may have some bearing on the question. Moreover, the iron chairs which support the rails are bedded on the wooden cross sleepers at from three to five feet apart, which circumstance—if the writer's hypothesis be correct—viz., that where there is no body of wood between the rails and the ground, as at the points of the longitudinal bearers, to intercept the radiation of heat from the ground, the hoar frost is not seen, must have an effect on the rails—that is, cause the dew to be more susceptible of freezing at and near the points of support than elsewhere; but we have yet to learn that it has ever been observed on any line where cross sleepers are used, that some parts of the rails were covered with hoar frost while other parts were not. Whether the phenomena noticed by the writer in his ride on longitudinal bearers—viz., the absence of hoar frost over and near the joints, while all the rest of the rails were completely covered with it, has been traced by him to the right cause, is at present immaterial, all I here contend for being the uniform operation of nature in all parallel cases.

It is admitted on all hands, that slipperiness from frost on the rails is a great evil, for which a remedy should be sought; but to me it appears such will be sought in vain, as long as iron driving wheels are used on iron rails; whereas, with wooden wheels, on wooden rails, an easy remedy is at hand. A mixture of gas tar and fine sand, applied to the driving-wheels as they revolve, would set frost, ice, and wet, at defiance, and save the trouble of discussing the phenomena in question, and endeavouring to divine the causes of their existence; and, what is of real interest to the whole community, insure the punctual arrival of the passengers and the mail bags in all seasons at their appointed times. But the phenomena discoverer cannot be ignorant, that on cross sleepers the trains, in frosty weather, are often brought to a dead stand, or only progress at the rate of two or three miles an hour, though this important fact is not noticed by him at all.

We are now brought to the consideration of the second alleged cause of longitudinal bearers occasioning 50 per cent. more draught than transverse sleepers. It is "wet;" and certainly somewhat marvellous may it be considered, that wet should happen to be of precisely the same obstructive character as hoar frost and ice; in fact, it seems that water, whether in its natural or congealed state, is a determined enemy of longitudinal bearers. "On a train passing," says the writer, "after rain, I observed, even under the nail which fastened the rail to the timber, that water was expressed from between the timber and the metal, as the engine passed, and re-absorbed the moment after. The same phenomenon, but in an inferior degree, occurred as the carriages passed. 'Hence,' as Mr. Gray observed, 'wherever the wheels are in wet weather, it is a valley, and they are in a position of constantly ascending a hill,' which, of course, much increases the draught." We are instructed by the above quotation, that, at certain seasons, longitudinal bearers form a valley the entire length of the road, and that the engine and carriages are travelling up hill the whole distance; hence the 50 per cent. extra draught! If this does not out-Herod Herod, what would? But let us endeavour to explore this tremendous valley. I presume it will be admitted that under the shed at the termini there is no wet, and, consequently, no valley there, but level ground, the commencement of the valley being outside the shed. If so, there must be a descent, which the philosophizing writer ought to know must be an equivalent for his imaginary rise. That descent, if any at all has existence, may be the sixty thousandth part of an inch—perhaps not so much; and so, especially at railway speed, we soon get to the bottom of this formidable valley, which the philosopher represents as being continually formed as the train progresses, and which is, consequently, always working against a hill. This extravagant supposition results from both the writer and Mr. Gray making no distinction between an iron rail and a piece of velvet, on which a wheel would produce a continual ridge, occasioning a considerable amount of resistance; but as no such ridge can be formed on an iron rail, no such resistance can be experienced; and as there cannot on a level railroad be any ascent without a corresponding descent, undulation brings us to a balance, and is comparable to a pound containing a pound all the world over. When railways were projected, some engineers, on whose pretensions the organ of science was not very strongly developed, broached the doctrine, that power would be gained by an undulating railway; and truly the existence of rails on cross sleepers justifies the supposition, that a doctrine so utterly at variance with science is not yet altogether exploded. Now the terrible valley, about which we have been entertained, is (to give our philosophic writer and Mr. Gray all they could possibly desire to have conceded to them) nothing but an undulating railway. But is it not strange that the writer should not have thought of putting his hand down to ascertain what effect was produced when the trains passed, on the rail between the points of support afforded by the cross sleepers? If he had done this, he would have found the deflection to be much more than any that could exist between the rails and the longitudinal bearers on which they are fixed; and then might we have expected a flowing exclamatory, that he had discovered the extraordinary phenomena, that trains on such sleepers meet with a degree of resistance capable of being duly illustrated only by a comparison with some mountainous ascent the entire length of the road. "Where doctors differ, who shall decide?" In dry weather, "Mr. Gray does not think there is much difference between the draught on continuous bearings and cross sleepers," whereas the philosopher is "somewhat sceptical upon this," and some who were connected with the Midland Counties Railway are understood to be of the same opinion. Fudge! What man can be so credulous as to suppose that wet under the bearers, in which the rails are firmly screwed down, can be the cause of any deflection that could in the slightest degree increase the draught. In truth, the wet would swell or expand the wood, and if possible bring the rail into closer contact with it than before. Therefore, as between the rail and the longitudinal bearer, I deny the existence of deflection and undulation altogether; whereas on the barbarous system of cross sleepers, the existence of both can be demonstrated to a frightful extent. The chairs on these sleepers are continually working loose, producing both undulation and great danger; but this is not all. In wet weather, in particular, they are seldom or ever, as can easily be imagined, firm in the ground—whence undulation and oscillation too result to a degree that must in every reflecting mind occasion serious apprehensions; but with longitudinal bearers, properly laid down, neither of these evils can exist. An acquaintance of mine, a practical engineer, travelled some time since in wet weather on the Southampton Railway, which is formed of these unscientific supports, and on alighting at one of the stopping places, discovered the carriages to be splashed all over with mud; he inquired the cause, and on being informed that it arose from the sinking of the sleepers, as the train passed over them, said (being fully alive to the danger) "then I will not proceed one step farther with the train," which he instantly left, and completed the journey in the best way he could. If any of the Southampton Railway people deny this, his name shall be given.

THOMAS PARKIN, C.E.

Moorgate-street, Feb. 9.

THE BUDE LIGHT—ITS INVENTOR.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I shall be much obliged if you will obtain from your correspondent, "J. J.," the date of the paper referred to by him as intrusted to Dr. Lardner, and from which the Bude Light is said to have originated. If this is furnished I will make you immediately a farther communication on the subject.

W. K.

London, Feb. 16.

[The information required by our correspondent will, doubtless, appear in our next.]

ON THE CLEANSING OF ENGINE FLUES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—All who are cognisant of such operations must be aware of the pernicious effect of one's exposure to such heat and dust. Why might not the engine be made to compress a few strokes of air into a chest for the purpose of passing a blast through the flues? This, at any rate, would clear off the dry dust, and render the places less unpleasant to enter, in cases of leaky boilers; otherwise, where there is no leak, I presume the flues need not be entered.

JOHN PHILLIPS.

Tuckingmill, Feb. 16.

EXPLOSIONS OF STEAM-BOILERS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—"Ignorance is always presumptuous," but an idea seems to be entertained that none but practical men should hazard an opinion on causes and effects—indeed, this has been not merely insinuated, but even asserted by some of your correspondents, whose communications I have read with much pleasure; not, it is true, in plain terms, but in gibes and satires from "operative engineers!" Practical men, as such, are, of course, only mere imitators of that which has been found by themselves or others, by experiment, to be practicable. The moment practical men deviate from the established mode, before actual trial, they are themselves but mere theorists; for that which, being new, is made, or conceived and expressed, by design, must exist in the imagination of the "visionary" before its existence as a tangible reality or scientific principle.

Having succeeded in discovering an occult principle with respect to the Cornish water-pumping steam-engine—viz., increase of the quantity of water raised by the sudden expansion of steam, and the slower motion of the descending plunger, and consequent comparatively slow ascent of the column of water (though unacknowledged by those who have since written scientifically on the subject)—may I be allowed to venture another suggestion as an humble inquirer? * * * Your paper is a sort of safety-valve, through which we may let off our waste steam, with only an electric shock now and then through the eyes. But, to the subject. None of the theories respecting explosions appear to be satisfactory, especially to your respected contributor, Mr. Tregaskis. Nearly all your correspondents on the subject (except Mr. Williams, on sediment) assume, that there is invariably, when such accidents occur, a deficiency of water in the boiler. It is a fact well known, that there is frequently too much water, which is even forced into the piston. Whatever the pressure of the forcing pump, from its comparatively small dimensions, it is still, aided by the leverage of the beam, enabled to continue to the boiler a supply of water the length of the stroke of such forcing pump. Water is incompressible, and safety valves have been "gagged" by cohesion, &c. Any boiler, full of water, may be burst by fire, if there be no escapement. Suppose a boiler to be full at the moment of the stoppage, or the piston valve to be closed before the stroke of the forcing pump is completed, might not this enormous pressure rend the boiler, or force a hole, or cause a break in an overheated plate, the steam about which might not rise as in a boiler not full? and does not this obviate Mr. Tregaskis's objection, that the piston would be powerfully affected by an increased pressure of steam, if explosions arose from pressure? When the temperature is low, the filling of the boiler is, perhaps, not a matter of so much moment. Is it not, also possible, that, when the boiler is quite full of water, the caloric accumulates in the plates, so as to weaken their adhesion or tenacity? It may be objected, that the internal tube could not be rent, bilged, or broken, by what is, to it, external pressure; perhaps not, if the temperature were equal, which is not the case. The fact of men being burnt or scalded to death, to be buried under the silent system, like those who fall away from ladders, &c., in the absence of reporters, who do not wish to hush the matter up—as in lunatic asylums and gaols, with hand mills, one of which (Bodmin) the writer abolished by three anonymous letters, doubtless, supposed to be the production of "a golden image." Though men of science, like other students, are rather irascible, when we tread on their toes, they will, perhaps, without scowling me from existence, deign a reply.

A. T. J. MARTIN.

Penzance, Jan. 29.

REMAINS OF THE ICHTHYOSAURUS IN IRELAND.—The following notice of the discovery of some remains of the ichthyosaurus in Ireland is extracted from a letter by James Bryce, jun., M.A., F.G.S., dated Belfast, January 20:—"Since that time (May, 1831) detached saurian vertebræ have been found in various places, in beds between the chalk and new red sandstone. These were generally so small and badly characterised, that I found it difficult to determine the genus to which they belonged. Within the last few months, however, some well-marked remains have been discovered; they were found in the lower greensand at Woodburn, near Carrickfergus, by Mr. Wm. Young of this town, and consisted of a large dorsal vertebra and some smaller ones from the extremities, but in such a position as rendered it doubtful whether they belonged to the same individual. They were easily recognised to be vertebræ of an ichthyosaurus, by the compressed form of the body, the double concavity of the articulating surfaces, by the small pits on each side of the spinal canal, and by the articulating tubercles for the attachment of the bifurcate rib. The length of the largest vertebra is an inch and a half, and the diameter of its end four inches. So far as I am aware, this is the only instance yet recorded of the discovery of ichthyosaurian remains in this country."

FOSSIL INFUSORIA—IMPORTANT DISCOVERY.—A paper was recently read at the Microscopical Society, by Mr. John Quekett, "On the Presence, in the Northern Seas, of Infusorial Animals, analogous to those occurring in a Fossil State at Richmond, in America;" in which the author, after alluding to the discoveries of Professor Ehrenberg, in this department of science, proceeded to mention a stratum of fossil animalcules twenty feet thick, recently detected by Professor Rogers, underlying the city of Richmond, in America; it contains beautiful specimens of navicula, actinocyclii, gallionellæ, &c., &c.; but the most remarkable form is a circular disc, with markings very similar to those on the back of an engine-turned watch. On examining the sandy matter which had been washed from some zoophytes brought home in spirit by the northern expedition with Capt. Parry, in 1822, the author detected more than six animalcules in it, precisely analogous to those occurring as fossils in the Richmond sand, and amongst them the engine-turned discs; these last occur in the fossil state singly, very rarely in pairs, and some doubts have arisen as to their correct nature; but the investigations of the author have led him to consider them as a species of bivalve, and many, both with and without markings, are to be found in the recent state, inclosing granular matter between their valves. The smallest specimens were often seen to be adherent to fragments of sea-weed by a small stem or pedicle. The paper was accompanied with specimens of the animalcules, and with illustrative diagrams.

PROCEEDINGS OF SCIENTIFIC BODIES.

GEOLOGICAL SOCIETY OF LONDON.

At the meeting of this society on the 5th ult. (R. I. Murchison, Esq., President in the chair) the following papers were read:—

1. "On Fossil Bones found on the Surface of a Raised Beach at the Hoe, near Plymouth." By Dr. Moore.

In our reports of the meeting of the British Association at Plymouth, in August last, an abstract will be found of a paper by Dr. Moore on those fossil bones, and a notice of the objections which were made to the author's inferences. In the memoir read to the Geological Society on the 5th of January, the substance of the former communication is given, but its principal object is to prove, first, that the bones could not have been derived from the emptying of a cave, bearing all the evidence of having been deposited where they were found at a very remote period, and probably long before they could have been affected by human agency. Secondly, that the beach with associated bones could not be a diluvial or drift accumulation, because it resembles, in character, a modern beach, and contains marine shells, and because the bones were found not in, but upon, the deposit. Thirdly, that the beach did not result from glacial action, as there are no indications of it in the neighbouring district. Lastly, he maintains his former views respecting the beach having been raised above the level of the sea, and at a period about, or probably more recent than, the time when the animals, whose remains are found upon it, disappeared. Appended to the paper was a note on a mass of limestone perforated by irregular cavities, considered by Dr. Buckland to be due to the action of snails, but which Dr. Moore conceives were formed by pholades.

2. "An Account of the Contortions and Faults produced in the strata underneath, and adjacent to, the Great Embankment across the Valley of the Brent, on the line of the Great Western Railway." By Mr. Colthurst.

The vegetable soil, on which the embankment was thrown up, rests on a stratum four feet thick of brown or alluvial clay, under which is a bed of gravel varying in thickness from ten to three feet, and the whole reposes on London clay of the usual characters. The surface of the valley at this part gradually slopes towards the Brent, the difference of level between the southern or more distant side of the earthwork and the river being about twenty feet. The height of the embankment is fifty-four feet. On the night of the 21st of May a settlement was first noticed, and in the morning the foundation was discovered to have given way, and a large mass of ground, fifty feet long, and fifteen feet wide, to have protruded on the side towards the Brent. During the four succeeding months this mass continued to increase, and the disturbance to extend, so that at the end of that period the surface, to a considerable distance from the base of the embankment, had assumed an undulated outline, and the subjacent strata, where they were cut into, exhibited corresponding curvatures, cracks, and overlappings in the beds, due to horizontal movements. In the earthwork itself, up to this time, the only evidence of failure, in addition to a sinking in the surface of fifteen feet, was a large crack near the top, and on the side opposite to that in which the foundation had yielded, but slanting towards the same point. Passing over the effects gradually produced during a period of nearly twelve months, at the end of which the total subsidence had exceeded thirty feet, and the swollen ground, at the base of the embankment, had attained an average height of ten feet, with a range parallel to the earthwork of nearly 400 feet, and an occasional horizontal displacement of fifteen feet, the author proceeds to describe the nature of the curvatures and other irregularities produced in the strata, extending 220 feet, or from the foot of the earthwork to the Brent, the bank of which was forced five feet inwards; but it is impossible to render the account intelligible without the aid of diagrams. The remedy applied by Mr. Brunel was a supplementary embankment or terrace thrown down on the protruded mass, and it has proved effectual. In the second part of the paper the author dwells upon the magnitude of the disturbing effects thus produced by human agency, and asserts his belief that many of the distortions, visible in the solid strata of the earth, may have been produced by the effects of superincumbent masses thrown down upon them by the ordinary operations of nature; but while he advocates the explanation of certain geological phenomena by means of pressure from without, he does not deny that many, and more especially the most considerable irregularities which occur in the structure of the earth, may be assigned to other causes.

3. "Notice of the occurrence of Fossil Plants in the Plastic Clay at Bournemouth, Hants." By the Rev. P. B. Brodie.

To the east of Bournemouth the cliffs consist of white and yellow sands belonging to the plastic clay, and as they range along the shore they increase in height, beds of clay full of vegetable remains appearing under the sands. About half a mile from this point they are composed of alternations of white, grey, and yellow sand, overlaid by strata of clay divided by thin layers of vegetable matter. In a bed of white sand near the middle of the cliff are impressions of ferns; and a layer of sandy clay is full of small leaves. Somewhat farther are strata of sand and sandy clay, abounding with beautiful vegetable remains. The plants are frequently so well preserved that the epidermis peels off when the specimen is exposed, and they are stated by the author to belong to genera of a warmer climate than that which now prevails in Great Britain.

4. "On the Mouths of Ammonites and on other fossils found in the Oxford Clay, near Christian Malford, on the line of the Great Western Railway." By Mr. C. Pearce.

The section exhibited at the point where Mr. Pearce obtained his specimens was as follows:—

1. Alluvial soil .... 2 feet.
2. Gravel .... 6 „
3. Beds of laminated clay, alternating with layers of sandy clay, chiefly composed of broken shells .... 6 „

The fossils described in the paper were procured from No. 3, and consisted of crustaceans, which the author conceives inhabited the dead shells of the ammonite, and to which he applies the generic names of Ammonicolax, of numerous bivalves and univalves, of ammonites with the mouths beautifully preserved; belemnites and an allied genus, for which he proposes the name of Belemnoteuthis. Of many of these fossils detailed specific characters are given, but, as they do not admit of abridgement, we must confine our notice to the author's remarks on the structure of the mouth of the ammonite. Mr. Pearce is of opinion that the lip or perfect termination of the mouth assumes a different shape in almost every species, and that it has a simpler form in the adult or full grown shell than an immature individuals. For several years he has remarked that specimens of what he considered to be full grown ammonites with a perfect lip, had a nearly straight or slightly waved margin, whilst smaller, and as he conceives younger, shells of the same species, possessed in many instances lateral prolongations, equalling, occasionally, in length, as he has recently observed, five-sixths of the diameter of the fossil. During the growth of the shell, these processes, he is of opinion, were successively absorbed and reproduced, but were never added to the final lip. From an extended examination of ammonites belonging to various rocks, Mr. Pearce infers that in the young shell, provided with lateral projections, the animal filled not merely the whole of the last chamber, but extended beyond it, and thereby guarded the processes from injury, and received support or protection from them. On the contrary, the last chamber of the mature shell having been, he believes, sufficiently large to receive the whole of the soft parts of the animal, the lateral appendages were not required, and consequently were not added to the lip. In the course of the paper some remarks are offered on other species of ammonites, which apparently never possessed lateral processes at any period of growth, but are characterised by contractions or expansions of the shell at certain points, and in those cases Mr. Pearce concludes that the additions were made without the absorption of the old mouths.

INSTITUTION OF CIVIL ENGINEERS.

FEB. 8.—The proceedings of the evening commenced with a paper "On the Port of London," by Mr. Richardson, from which it appeared, that, previously to the commencement of the present century, the accommodation for landing foreign produce was limited to one legal quay, about 1400 feet long, extending from London-bridge towards the Tower. Sufferance wharfs existed, but they were in such a bad neighbourhood, and were so ill arranged, that they afforded but little assistance to commerce. The first suggestion for the construction of floating docks was by Mr. Sharp, in 1773. In 1800 the first stone of the West India Docks was laid, in the year following the London Docks were projected, and in 1803 the East India Docks were commenced. All the works were intrusted to Mr. Ralph Walker, as engineer, but, in the West India Docks, Mr. William Jessop was associated with him. The paper detailed, at some length, the reasons for additional accommodation for vessels being required, and the causes of the obstructions in the river, with tables of the increase of the numbers and tonnage of vessels frequenting the port between the years 1700 to 1795. It noticed the various plans for a comprehensive system of docks for all kinds of shipping, and then gave a detailed account of the works at the London Docks, illustrating them with a series of clear and well-executed drawings, eminently valuable for consultation.

A paper by Mr. Townshend described the last of a set of various arched bridges near Leone, in the Grand Duchy of Tuscany, which he had an opportunity of examining when engaged for Mr. Stephenson, in laying out the railway from Leghorn to Florence.

The description, by Mr. Hussie, of a Welsh iron work, was of such a technical character, that any extract from it would scarcely be intelligible. It detailed, at great length, the construction of an iron work, giving the reasons for deviating from the usual mode of construction, and the effects which had resulted. The drawings appeared very complete, and the calculations were such as would be useful to the engineer engaged in similar works.

A very animated conversation ensued between Dr. Faraday, Mr. Lowe, and others, on the chemical changes undergone by the iron in the process of smelting.

FEB. 15.—The papers read were—"An Account of Chelsea Meadow[illegible]

Sluice," by Mr. Budd, the principal peculiarity of which appeared to consist in making the centre of motion of the sluice doors so much above the centre of gravity as greatly to increase their freedom of action.

"On the Mode of Obtaining Foundations for Bridges, &c., in Sandy Soils in India," by Captain Goodwyn.—The method is very ingenious; it is by means of a series of brick shafts, which are consecutively built upon the surface, and the soil then excavated from within, similar to the process pursued by Sir Isambard Brunel, in preparing and sinking the shafts for the approaches of the Thames Tunnel, except that the Indian shafts are only three and a half feet interior diameter. They are frequently sunk through water, and, in that case, the native labourers dive alternately with the instrument for excavating, and frequently remain full a minute at a time under water. The shafts, when sunk to an uniform level, are connected by arches both ways, and the edifice is erected upon them as upon piles.

Mr. Wilkinson's account of copper sheathing for vessels, was a paper of too much value to have been read at the latter part of an evening, as it gave an historical account of the first recorded use of copper, the gradual introduction of that metal, and its several alloys for sheathing, with a list of all the patents for metallic sheathing, which might be consulted with much advantage by all those whose attention is directed to the subject. Sir Humphry Davy's protectors, and the experiments upon them, were also minutely described. Altogether, we have rarely heard a paper displaying more careful research, on a most important subject.

LONDON ELECTRICAL SOCIETY.

At the meeting on Tuesday, the 15th instant, the papers read were—1. "On the Electrical relation between Plants and Vapours." By Mr. Pine.

The writer of this paper follows up his previous opinions upon the manifold operation of electricity to facilitate the deposition of vapour, and aiding the functions of vegetation. He relates several experiments both in the field and in the laboratory which confirm his opinions. There are, amongst these, some interesting cases given of the relative electric condition of stationary and of moving fogs, of vapours near, and of others at a distance from vegetation.

2. "Further Observations on Electrotype Manipulation." By the Secretary.

Referring to the difficulty often felt by experimentalists of inducing the speedy deposits of copper over a large surface of black lead, or over a surface in deep relief, it is advised that one or more pieces of binding wire be twisted round the main wire, and be suffered to impinge upon any part of the surface uncovered by the deposite; by this means the whole surface will very speedily be coated. The rest of the paper was devoted to a description of "electro-lace," a novel, but pretty, application of the same universally applicable science. The basis is net, prepared according to the usual plans. A few hours action so covers it with copper, that it seems converted into that metal. Specimens were exhibited, which were much admired. It opens a new and extensive field for the extension of this art to the production of those delicate and chaste ornaments, and fancy articles, now constructed of perforated cards, &c. The lace is readily plated; nor is the application confined to this article alone, but may be extended to all the various gauzes and delicate fabrics with which the market abounds.

3. "Nitrate of Soda for Voltaic Batteries." By Mr. Mackrell.

From a series of experiments, the writer of this is led to prefer this salt to sulphate of copper or to bi chromate of potassium; he details a series of results which well deserve notice, and, if succeeding investigations should confirm the opinions deduced from this, the first employment of the salt, a vast gain will be made in the expense of exciting constant batteries.

Mr. Weekes's "Register" for January, drawn up with its customary accuracy and patience, was then laid before the society.

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ENGLISH MINES.

HOLMBUSH MINING COMPANY.

Feb. 14.—I beg leave to inform you that the lode in the 110 fathom level west is six inches wide, and producing stones of ore; the cross-cut, at this level, we expect, will be communicated to the level driving on the north lode, in the course of a few days. The lode in the 100 fathom level west is still about one foot wide, and worth 14*l.* per fathom; in this level, east of Wall's shaft, the lode is four inches wide, and unproductive; the lode in the winze, sinking below this level, on the south part, is six inches wide, with stones of ore. The lode in the eastern stopes, in the back of the 100 fathom level, is eighteen inches wide, and worth 35*l.* per fathom; the lode in the western stopes, in the back of ditto, is twenty inches wide, and worth 35*l.* per fathom. In the ninety fathom level west the lode continues about fourteen inches wide, and worth 16*l.* per fathom; the lode in the eastern stopes, in the back of this level, is fifteen inches wide, and worth 25*l.* per fathom; the lode in the western stopes, in the back of ditto, is two feet wide, and worth 44*l.* per fathom. The lode in the stopes, in the back of the eighty fathom level, is eighteen inches wide, and worth about 40*l.* per fathom. In the sixty-two fathom level, east of Wall's shaft, the lode is ten inches wide, composed of mundic and spar, with a small proportion of ore; in this level west we have commenced a cross-cut from Hitchens's shaft to cut the north lode that has lately been intersected in the said shaft. The tribute pitches are without important alteration; other parts of the mine not mentioned are much as last reported.
F. PHILLIPS.

TREGOLLAN MINING COMPANY.

Feb. 14.—I beg to inform you that we have had some improvement in the forty fathom level east since my last report; the lode, on the average, driving for the past week (two and a half fathoms) being worth 10*l.* per fathom for copper ore. In extending the cross-cut north, at this level, we have intersected a small branch, underlaying north, containing a small portion of yellow ore. The ground in this end still continues to be rather hard and wet. We have no alteration in the tribute pitches worthy of remark.
JAMES NINNIS.

TRETOIL MINING COMPANY.

Feb. 14.—The lode in the thirty fathom level, east of Williams's shaft, is eighteen inches wide, and unproductive. Tregellas's lode, driving west of John's shaft, at the thirty fathom level, is twenty inches wide—tribute ground for copper; ditto, driving east of John's shaft, at the thirty fathom level, is six inches wide—tribute ground for copper. The part we are driving on of the Minor park lode, east of Morcom's shaft, at the fifty level, is eighteen inches wide—tribute ground for tin.
H. WILLIAMS. J. MORCOM.

UNITED HILLS MINING COMPANY.

Feb. 14.—Williams's Shaft—No lode broken since survey day. Sixty Fathom Level—Lode three and a half feet wide, two feet of which is ore of good quality; in the western end the lode is five feet wide, but coarser in quality. Fifty Fathom Level—Lode two and a half feet wide, eighteen inches good ore in the eastern end; in the western end the lode is six feet wide, ore throughout, but coarse in quality. Forty six Fathom Level—The lode in the east end is improved, but the western end remains much the same as last week. James's Shaft—Lode three feet wide, eighteen inches ore of fair quality. Diagonal Shaft—Lode four and a half feet wide, kindly, with stones of ore. Forty Fathom Level—Lode in the winze two feet wide, and ore; nothing new in the cross-cut on eastern end. Thirty Fathom Level—Lode eighteen inches wide, six of which good ore, and improved since last week. Twenty Fathom Level—Large lode, and kindly, but does not produce much ore.
N. LANGDON.

TRELEIGH CONSOLS MINING COMPANY.

Feb. 12.—We have not yet been able to resume driving the seventy fathom level, in consequence of the water being in. The sixty is two and a half feet wide, and worth 8*l.* per fathom; the pitches in this level are looking well. The fifty is improved; it is three feet wide, and worth 35*l.* per fathom. The tributers generally, at Christmas, are working well, and getting fair wages. At the old engine-shaft we have passed through several branches, but neither of them like the lode on the other side. Gordon's shaft continues to go down in good ground, and the rise from the twenty against it is also in favourable ground. At Good Fortune the forty-four east continues very; the lode is eighteen inches wide, and worth 16*l.* per fathom; and the thirty four is worth 5*l.* per fathom.
W. SARGOON.

WEST WHEAL JEWEL MINING ASSOCIATION.

Feb. 14.—The seventy cross-cut south is still favourable for driving. In the past week we have cut Wheal Jewel lode, in this level, west of the cross-course, and shall report upon it in our next. The seventy east, on the south branch, is without alteration. The fifty-seven east, on Wheal Jewel lode, is worth 6*l.* per fathom. A rise in the fifty seven, on the south branch, is worth 6*l.* per fathom; and the winze sinking from the level above is worth 8*l.* per fathom. No alteration in any other part of the mine.
S. LEAN.

TAMAR SILVER-LEAD MINING COMPANY.

Feb. 14.—In the 125 fathom level the lode is one foot wide, producing a small quantity of ore. In the 115 fathom level the lode is eighteen inches in width, composed of capel and soft spar, intermixed with some lead ore. In the 105 fathom level the lode is two feet wide, composed of capel, mundic, and ore. In the ninety-five end the lode is one foot in width, and producing good work. In the eighty five fathom level the lode is two feet wide, saving work, but not rich. In the seventy-five end the lode is about the same width, chiefly composed of capel, intermixed with ore, and some very promising work. In the sixty-five end the lode is one foot wide, but at present poor. In the forty-five fathom level the lode is six inches wide—very. In the thirty five fathom level the lode is just the same as it has been for some time; three men to three feet big, carrying branches of silver-lead ore. In the tribute department the men, on the whole, are getting wages, and we expect to sample, next week, about sixty-four or sixty five tons of rich silver lead ore.
JAMES SPRAGGE.

REDMOOR CONSOLIDATED MINING COMPANY.

Feb. 14.—Our prospects at the sixty fathom level have very much improved within the last few days; the lode in the south end is from six to eight inches wide, rich for silver-lead ore; in the north end the lode is six inches wide, leady throughout. At the fifty fathom, the lode in the north end is six inches wide, composed of spar, peach, and a small portion of lead; going east on the copper lode, at this level, the ground continues favourable for driving; the lode is 1 ft. 6 in. wide, of spar, peach, mundic, and very good stones of ore. The men have communicated the rise with the forty fathom level, and will be immediately put to drive south on the lead lode at this level (viz., the fifty), where the lode is from four to six inches in width, very good for silver-lead ores. The lode in the south end, at the forty fathom level, is from eight to ten inches wide, good saving work; going north, at this level, we have a very kindly end; lode about six inches wide, good work for lead ores.
F. R. ROWE.

CORNUBIAN MINING COMPANY.

Feb. 14.—The south lode, at the sixty fathom level, in driving east of the engine-shaft, continues regular, but almost unproductive; in the last week we have broken some stones of ore. The western end, at this level, on Chiverton, has much the same appearance as reported to you last week; it is a large and exceedingly promising lode, producing good stones of lead at times. The rise, in the back of the fifty fathom level, is progressing speedily, and, when completed, will greatly ventilate the western part of this level, and, as well, enable us to work some of our ore ground to much better advantage. The ground is still good in the thirty-two fathom level cross-cut, towards the north lode. At Murray's, we have found the lode poor in driving west, and have now taken the same men to clear this level back eastward in the old gunnis, to communicate with the old western shaft, so called. In the eastern part of the mine, at the twenty-four fathom level, driving east of Clifford's shaft, the north lode presents a very kindly appearance, being large, and impregnated throughout with rich veins of ore. The sixteen fathom level, also on the north lode, is improving; the lode is from one to two feet wide, saving work. At the eight fathom level we have risen through a good lode for several fathoms high; the lode, at present, is not so rich as heretofore for lead, being now chiefly in a large beautiful gossan. Our prospects in this pitch, and more especially in the eastern part of the mine, are very favourable. On Monday last, the fifty-four tons parcel of lead for December, 1841, purchased by Messrs. R. and W. Michell, weighed off fifty five tons; and on Thursday next we expect to sample just the same quantity for January, 1842.
R. ROWE.

MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

MANGANESE.—An abundance of this mineral has recently been found near Willunga, in South Australia, which has been submitted to experiments by Messrs. E. Davey and James Weston, who state that "the mineral consists of a black substance, diffused among crystals of quartz. The quartz, in some places, is slightly tinged of a greenish colour, which appearance proves, on examination, to be caused by a vegetable matter, apparently a minute species of moss. The black substance is oxide of manganese, containing some oxide of iron and alumina, with the silica derived from the quartz matrix."—*West Briton.*

SUCCESSFUL MINING OPERATIONS IN SPAIN.—Mining in Spain is increasing to a remarkable degree; mineral veins have been discovered in almost all parts of the country, and many have been worked with success. In Murcia and Andalusia the mines are asserted to have been very productive. A joint-stock company has been formed at Palencia for working the copper and coal mines lately discovered in the environs of that town.—*Sun.*

MINE ACCIDENTS.

Wheal Virgin Mine.—W. Dennis met with an injury whilst at his employ at this mine on the 23d of January, of which he died on the 1st inst.

Ninnis Wheal Virgin, St. Hilary.—Samuel Barker received such severe injuries from an accident at this mine on the 3d inst. as to occasion his death.

George Pit, Great Lumley.—An unfortunate pitman fell down the shaft of this pit on Wednesday week, and was instantly deprived of life; he was approaching the shaft, carrying a lighted candle, which he was endeavouring to protect from the wind, for the purpose of descending to his work, and while his attention was thus engaged he unconsciously stepped into the frightful abyss.

Wonderful Preservation.—We learn from *Le Commerce* that a miner was working on Wednesday in an abandoned coal-pit, when the earth gave way and buried him alive. The miners of the neighbourhood, on hearing of the accident, went to his assistance, but did not succeed in extricating him until the Sunday evening—the man was still alive! He has not yet been asked how he managed to support existence, but in his pockets was found some tobacco, with which he no doubt satisfied his appetite. He is still in a dangerous state.

Whittington.—On Friday week a serious accident befel Mr. Edward Marr, while in attendance at the collieries belonging to his father; the workmen were employed in lifting the pumps, but, owing to some accident, the capstan suddenly ran back, and one of the arms struck the unfortunate young gentleman on the side, breaking three of his ribs, and otherwise severely injuring him.

Rutherglen.—On Wednesday an old man, named Sinclair, by the fall of the roof in one of Captain Ferrie's pits, near Rutherglen, was so severely injured that he survived only a few minutes. He is the sixth or seventh member of the same family who has met his death by similar accidents in coal-pits.

St. Vincent's Rocks.—A dreadful accident occurred at St. Vincent's Rocks, on Thursday week, to a poor quarryman, named Charles Parsons. He had placed a quantity of gunpowder in a bore, for the purpose of blasting the rock, and was in the act of ramming some wadding upon it, when the iron bar which he was using for that purpose came in contact with a flint and caused ignition of the powder, by the explosion of which the poor fellow was driven with dreadful violence to a considerable distance from the spot. On examination it was found that a great quantity of powder had been forced into his eyes and face, and that his body was severely contused and lacerated in many parts.

Parknoweth Mine.—On Friday week an accident, which may be attended with serious consequences, took place at Parknoweth Mine, St. Just, Penwith; a young man, named Carnew, whilst engaged about a capstan, by some unaccountable means, fell backwards, when a heavy iron-bar fell from a considerable height, and struck him in the eye, cutting the eyeball in two parts, and seriously injuring his nose; great fears are also entertained for his other eye.

Soap House Pit.—On Thursday, the 20th ult., Joseph Oliver, a collier, went into the Soap House Pit with a lighted candle, and was dreadfully burnt by an explosion of fire-damp. We understand (says the *Sheffield Iris*) that another explosion took place on Tuesday last, when four men were burnt, but not so severely as to prove fatal.

IMPROVEMENT IN SMELTING-FURNACES.—M. Ebelmen read an interesting memoir at the Paris Academy of Sciences, on the 1st inst., on the nature of the various vapours developed in smelting-furnaces, as observed at different altitudes within the furnaces. The object of such researches was to determine the degree of heat at various points, and to devise means for the improved regulation of the fires; he had arrived at the following results:—1. The gaseous vapours, on coming out of a furnace heated by charcoal or wood, contain watery vapour, carbonic acid, and oxides of hydrogen and azote, but no carbonated hydrogen. At six or eight feet below the mouth of the furnace the watery vapour is not found, and the proportion of oxide of carbon increases, while those of hydrogen and carbonic acid diminish, according as the observations are made lower and lower down in the furnace. 2. When coal is used jointly with wood for heating the furnace, the carbonisation of the vapours takes place in an interval zone, and the water is expelled from the metal at a very low altitude; he found that the proportion of gas which traverses a certain point of the furnace per minute is greater according as it is further from the bottom of the furnace.

A WATER-WHEEL PROPELLED BY THE WIND.—Such was the violence of the gale on Wednesday week, that a water-wheel, of sixty feet diameter, at the Cwm Sebon Mines, near Aberystwith, which revolves six times per minute towards the west, was, by the force of the wind, forced to revolve twenty times per minute to the eastward; so that the mine had the water in the shaft pumped by wind instead of water, and it was impossible to stop the accelerated action of the water (but, for that time, wind) wheel.

SULPHUR QUESTION.—In the House of Commons, on Monday last, Dr. Bowring moved for, and obtained—copies of the conclusion of France relating to the sulphur question, dated in July, 1840, of instructions given by the British Government to the commissioners; statement of the claims presented to the mixed commission by British subjects; statement of the awards given by the mixed commission; and a copy of the report of the British commissioners to the Government.

WORK PERFORMED BY STEAM-ENGINES,

IN JANUARY, 1842.

Taken from the official duty paper of Mr. Thomas Lean, of Marazion, Cornwall

s stands for single; d for double; in. for inches.

Mines.	Engines.	Stroke in cylinder.	Load per sq. inch on pist.	No. of strokes p. minute.	Consumption of coal in bushels.	Pounds lifted 1 foot high by a bushel of coal.	Average quan. of water p. min.
		Feet.	Lbs.		94 lbs.		Im. gal.
W. Darlington	Eastern 80 in. s	10,0	12,0	9,30	—	—	1290,7
Ditto	Maine's 60 in. s	10,0	12,0	7,11	2668	46,657,557	654,6
Gt. W. Fortune	G.W. Fort. 85 in. s	—	—	—	—	—	—
Ditto	Wh. Pros. 60 in. s	9,7	10,5	7,8	—	—	444,6
Ditto	T. Downs 70 in. s	—	—	—	—	—	—
Ditto	Wh. Friends. 70 s	10,0	12,3	9,46	3300	44,369,630	790,0
Ditto	Owen V. 70 in. s	—	—	—	—	—	—
Ditto	Gwallon 36 in. s	—	—	—	—	—	—
Providence	30 in. s	6,0	14,90	5,0	614	26,417,630	92,8
Wheal Virgin	60 in. s	10,0	13,1	7,0	2600	31,670,221	480,0
Reliatian	60 in. s	9,3	12,0	8,67	3134	44,480,688	560,0
Trevaskus	60 in. s	—	—	—	—	—	—
Duffield	80 in. s	—	—	—	—	—	—
Carzise Cons.	70 in. s	10,0	10,1	3,86	4100	40,602,000	644,7
Wheal Julia	60 in. s	—	—	—	—	—	—
Ding-dong	30 in. s	6,0	17,2	4,75	374	30,228,548	40,6
Levant	New 40 in. s	9,0	11,1	4,1	880	30,787,710	41,8
Botallack	30 in. s	6,5	10,0	3,6	846	33,000,630	38,5
Balleswidden	24 in. s	7,0	13,5	5,5	892	36,027,708	60,6
Godolphin	Sims's 80 in. s	10,0	11,19	6,3	3420	70,867,543	470,0
Great Work	W. Breage 60 in. s	9,0	9,5	4,5	1296	37,674,851	374,0
Ditto	Leed's 60 in. s	9,0	14,00	9,0	3868	71,649,119	
Wheal Vor	Borlase's 80 in. s	10,0	10,0	7,7	4479	71,659,176	1136,5
Ditto	Trelawny's 85 in. s	10,0	10,8	8,0	4856	63,329,290	
Ditto	Woolf's 53 in. s	9,0	10,0	9,8	3290	43,138,117	
Ditto	Penhale 60 in. s	9,0	12,73	6,8	1668	43,537,950	436,4
Trewavas	45 in. s	9,0	12,0	7,1	2700	31,666,498	433,9
Dunstanville	60 in. s	—	—	—	—	—	—
South Roskear	W. Chance 60 in. s	9,0	8,7	6,1	1096	33,236,480	145,0
North Roskear	New eng. 70 in. s	10,0	9,97	6,8	2264	36,443,004	331,6
E. Wh. Crofty	Trevenson 80 in. s	10,33	11,0	5,25	2266	63,004,215	336,7
Ditto	Dudnance 36 in. s	8,0	13,0	—	—	—	—
Dolcoath	76 in. s	9,0	10,30	7,7	2998	39,234,308	381,4
Wheal Jewel	30 in. s	8,5	13,0	8,3	1176	40,231,194	130,8
Poldice	Sims's 90 in. s	10,0	7,14	12,5	6944	36,848,300	667,8
W. U. Wood	Williams' 80 in. s	10,0	10,0	—	2830	—	—
Hallenbeagle	Vice's 70 in. s	10,0	7,0	8,3	1716	62,347,415	1000,0
Ditto	Buscow, 60 in. s	10,0	11,37	7,8	2500	32,044,240	
W. Beauchamp	Western 36 in. s	7,75	—	—	1776	—	—
Ditto	Powning's 36 in. s	8,0	16,3	7,6	1492	33,773,379	203,0
Wheal Uny	70 in. s	10,0	13,87	7,8	3300	60,0[illegible]6,336	364,9
Carn Brea	76 in. s	9,0	14,35	4,8	3773	38,180,436	638,7
Ditto	Sims 50 in. c.c.c.	9,0	14,75	6,9	860	60,463,476	
Tincroft	50 in. s	9,33	13,30	9,6	—	—	471,0
East Pool	60 in. s	8,75	7,8	6,8	1190	31,410,158	178,6
S. Wh. Basset	40 in. s	8,0	15,4	4,0	1492	34,303,427	156,4
Consolidated	Taylor's 85 in. s	—	—	—	—	—	—
Ditto	Davey's 80 in. s	—	—	—	—	—	—
Ditto	Pearce's 65 in. s	—	—	—	—	—	—
Ditto	Woolf's 90 in. s	—	—	—	—	—	—
Ditto	Hawkes's 90 in. s	—	—	—	—	—	—
Ditto	Job's 65 in. s	—	—	—	—	—	—
United Mines	Taylor's 85 in. s	11,0	11,45	7,9	2664	91,869,610	2440,0
Ditto	Cardozo's 90 in. s	9,0	13,5	6,9	5692	[illegible]	
Ditto	Eldon's en. 30 in. s	9,0	15,0	9,5	873	60,010,037	
Ditto	Loam's 85 in. s	10,0	13,7	10,0	3415	60,641,505	
Ditto	Hocking's 80 in. s	10,0	16,0	6,70	4500	60,240,150	
Binner Bridge	80 in. s	10,0	5,6	5,6	870	30,409,216	283,9
S. Wh. Towan	70 in. s	10,0	9,3	6,4	2400	43,082,109	418,20
United Hills	Williams' 80 in. s	10,0	9,55	6,30	1970	60,482,799	604,14
Ditto	Old, 50 in. s	8,5	8,85	6,10	830	44,904,707	
Polberro	80 in. s	10,0	10,30	8,45	—	—	295,15
E. Wheal Rose	50 in. s	9,0	14,00	5,7	1200	45,389,044	290,8
Charlestown U	60 in. s	9,5	13,6	7,05	1800	45,200,000	327,01
W. F. Consols	Union, 40 in. s	9,0	16,60	—	—	—	—
Fowey Consols	Austen's 80 in. s	10,30	13,07	7,04	2410	61,798,471	649,6
Polgooth	66 in. s	9,0	9,9	—	—	—	—

ENGINEERS' NAMES.

Wheal Darlington, Eustis; Trewavas, T. Tippet; Great Wheal Fortune, Grose; Providence Mine, J. West; Wheal Virgin, Grose; Reliatian Mines, —; Carzise Consols, Grose; Ding-Dong, Eustis; Levant, F. Michell; Botallack, J. Rowe; Balleswidden, Eustis; Godolphin, J. Sims; Great Work, Richards; Wheal Vor, Richards; South Roskear, J. West; North Roskear, J. West; East Wheal Crofty, James Sims; Dolcoath, Jeffree; Tincroft, J. West; Wh. Jewel, J. Sims; Poldice, J. Sims; Wheal Unity Wood, J. Sims; Wheal Beauchamp, Hocking and Loam; South Wheal Basset, Dunkin; United Mines, Hocking and Loam; South Wheal Towan, J. West; United Hills, J. Sims; Charlestown United Mines, Darlington; W. Fowey Consols, W. West; Fowey Consols, W. West; Polgooth, J. Sims; Carn Brea, J. Sims; East Wheal Rose, Hocking and Loam; Hallenbeagle, J. Sims; Binner Bridge, F. Michell; East Pool, J. West; Wheal Uny, Hocking and Loam; Polberro, Hocking and Loam.

STEAM-ENGINES STAMPING ORES,

IN JANUARY, 1842.

Mines.	Engines.	Stroke in cylin.	No. of heads.	Av. weight of heads, lifters, and water cwt.	Consumption of coal in bushels.	Pounds lifted 1 foot high by a bush. of coal.
		Feet.		Lbs.	94 lbs.	
Balleswidden	36 in. s	9,0	80	60800	1080	62,600,700
Charlestown U.	3[illegible] in. s	9,0	60	40000	684	42,000,000
Wheal Kitty	22 in. s	—	—	—	—	—
Carn Brea	22 in. s	9,0	70,0	10143	—	—
Tincroft	28 in. d	9,0	48	90247	1000	45,192,800
Wheal Vor	50 in. d	10,0	64	64000	1092	74,700,000
Wh. Rosth Con.	2. in. s	7,75	—	—	—	—

ENGINEERS' NAMES.

Balleswidden, Eustis; Charlestown United Mines, Darlington; Carn Brea, J. Sims; Tincroft, W. and J. West; Wheal Vor, Richards; Wh. Rosth Consols, Eustis.

WHIM-ENGINES DRAWING ORES,

IN JANUARY, 1842.

Mines.	Engines.	Consumption of coal in bushels.	Av. No. of kibbles drawn from 100 fms.	Av. weight of a kibble in lbs.	Pounds drawn one foot high by a bushel of coal.	Horse whim kibbles, drawn from 100 fms. by a bush. of coal.
United Mines	Taylor's	260	11070	700	16,510,455	62,1
Ditto	Mitchell's	150	8011	700	17,400,000	67,0
Ditto	Loam's	250	10238	820	14,452,700	76,0
Ditto	Hocking's	215	9167	710	12,510,000	65,0
Charlestown U.M.	....	190	8781	1400	16,191,750	66,6
Fowey Consols	Davie's	272	12036	818	22,718,750	115,0
Wheal Trewavas	East Whim	80	830	800	5,100,000	15,5

ENGINEERS' NAMES.

United Mines, Hocking and Loam; Charlestown United Mines,—Darlington; Fowey Consols, W. West; Wheal Trewavas, T. Tippet.

The counter has been out of order at Wheal Unity Wood. The whim has been in at Tincroft part of the month.

Erratum in the Report for December.—For load of Binner Bridge read 12,878 duty, 33,000,000. The lifts have been altering at Polberro Engine, therefore the duty could not be accurately ascertained.

_ The number of pumping engines reported this month is forty-two. They have consumed [illegible] tons of coal, and lifted [illegible] tons of water ten fathoms high. The average duty of the whole is, therefore, [illegible] lbs. lifted one foot high by the consumption of a bushel of coal.

Marazion, Feb. 8. THOMAS LEAN and BROTHER.

Statement of the greatest and least quantities of water, in imperial gallons, discharged per minute from the mines in 1841; specifying the months in which it reached its maximum or minimum:—

Mines.	Maximum.		Minimum.	
Wheal Darlington, East	April	1290	August	770
" " West	December	656	February	321
Reliatian	"	560	January	148
Wheal Prosper	"	654	"	420
Wheal Friendship	"	797	"	510
Wheal Vor	"	1150	"	650
Great Work	"	481	August	240
Carzise Consols	"	745	January	644
Providence	"	97	September	77
Balleswidden	March	60	May	44
Levant	May	60	June	36
Ding Dong	October	120	January	60
Wheal Virgin	November	630	"	390
Botallack	October	40	May	30
Carn Brea	November	760	September	560
Binner Bridge	"	365	August	128
South Roskear	"	160	January	90
North Roskear	"	397	"	136
Dolcoath	"	480	August	340
Tincroft	"	550	January	[illegible]
United Mines	"	2980	[illegible]	[illegible]
Wheal Uny	"	400	February	[illegible]
Wheal Unity Wood	"	770	January	[illegible]
Poldice	"	660	"	440
Wheal Jewel	"	135	September	90
South Towan	"	480	January	[illegible]
Charlestown United	"	360	"	[illegible]
Fowey Consols	"	640	"	[illegible]
East Wheal Rose	"	504	"	[illegible]

MONEY MARKET AND CITY NEWS.

CURRENT PRICES OF ENGLISH AND FOREIGN FUNDS.

Consols Money, 89½ ¾	Danish, 3 per Cent., 81½ 2½
Ditto Account, 89½ ¾	Dutch, 2½ per Cent., 51¾ ¾
New 3½ per Cents., 98¾ ¾	Ditto, 5 per Cent., 102¾ ¾
Reduced 3 per Cents., 89¾ 90	Portuguese, 5 per Cent., 33 ¾
Reduced 3½ per Cents., 99¾ ¾	Ditto, 3 per Cent., 19 ¾
Long Annuities, 12¾	Russian, 5 per Cent., 115½ 116½
Bank Stock, 169 70	Spanish, Actives, 5 per Cent., 24¾ ¾
Exchequer Bills, 25 79 pm.	Chili, 6 per Cent., 76 77
Belgian Bonds, 5 per Cent., 102¾ 3½	Colombian, 6 per Cent., 22¾ 3
Brazil, 5 per Cent., 65 6	Mexican, 5 per Cent., 35 ¾

REMARKS ON THE OPERATIONS OF THE WEEK.

SATURDAY, Feb. 12.—The English funds were firm, with a shade of improvement in the quotations, but the business transacted was limited; Consols for Money, 89½, and for the Account, 89¾ ¾; Bank Stock, 169 9; India Stock, 244 6; and India Bonds, 4s. to 6s. pm.; Exchequer Bills still continue on the advance, the present price being 24s. 26s. pm.—In the foreign house the market was exceedingly buoyant for Mexican Stock, the value of which increased to 35, before the close of business, a rise of nearly 1 per cent. on the opening price, but in other securities there was no particular alteration.—Railway shares remain nearly as before, few transactions having taken place, and those at previous quotations.—Colonial Bank shares were done at 26¾.

MONDAY.—The home stocks, upon the whole, were not quite so good to-day, the closing price of Consols being, for both Money and the Account, 89 ¾, which was mainly attributable to the extreme paucity of business.—This was settling day in the foreign market; money was plentiful, and the settlement went off without any feature for remark; prices of stocks generally improved afterwards, with the exception of those of the Peninsula, which bore rather a heavy appearance.—The railway share market continues very quiet, scarcely a fluctuation took place in any of the lines.—In mining shares Bolanos scrip were done at 5¼; United Mexican scrip, ¾.—Colonial Bank, 26¾.

TUESDAY.—There was a slight improvement in the English stock market, prices generally had a firmer appearance, and left off at an advance on those of yesterday; Exchequer Bills 25s. to 26s. pm.—In foreign securities there was but little business doing, with the exception of that in Mexican Stock, which fluctuated between 34¾ 35 & 35¾, and left off at 35¼.—In the share market railways were in greater demand than for some time past, and, in most instances, better rates were obtained; Great Western Railway, 86; Brighton, 36¾; ditto, new, 3¾ ¾; Birmingham quarter shares, 34¾ ex div.; South-Western, 60; North Midland, new, 24¾ ¾; South Eastern and Dover, 26 ¾.—Bolanos mining shares were done at 5; and General Steam Navigation, 24¾.

The business transacted on 'Change to-day was to a greater extent than for some preceding past days, and the supply of paper having exceeded the demand, there was, generally speaking, an improvement in the rates negotiated.

The premium on gold at Paris is 7 per mille, which, at the English Mint price of 3l. 17s. 10½d. per ounce for standard gold, gives an exchange of 25 32½, and the exchange at Paris on London at short being 25 32¾, it follows that gold is 0·03 per cent. dearer in London than in Paris.

By advices from Hamburgh the price of gold is 429½ per mark, which, at the English Mint price of 3l. 17s. 10½d. per ounce for standard gold, gives an exchange of 13 7¾, and the exchange at Hamburgh on London at short being 13 9¾, it follows that gold is [illegible] per cent. dearer in London than in Hamburgh.

The course of exchange at New York on London is 109¾ per cent., and the par of exchange between England and America being 109 29-40 per cent., it follows that the exchange is [illegible] per cent. against England. But the quoted exchange at New York being for bills at sixty days' sight, the interest must be deducted from the above difference.

WEDNESDAY.—The English funds were firm throughout the day, at previous quotations, but business was very limited. The price of Consols, both for Money and Account, at the close, was 89¾ ¾; Exchequer Bills, 25s. 26s. pm. The foreign securities were dull, but generally remaining without alteration in price.—The share market was steady, at the closing prices of yesterday. Real del Monte Mining Association, unregistered, 3; United Mexican Mining Association, ¾.—British North American Bank, 32; Colonial Bank, 26¾; London Joint Stock Bank, 11¾.

THURSDAY.—The English funds had a particularly firm appearance throughout the day, and, though not a great deal of business was transacted, prices of stocks in general may be quoted on the advance. The result of the debate on the Corn Laws, though fully expected, tended to give the market a healthy character. Money was easy at 3 to 3½ per cent. Consols for Money and the Account closed at 89¾ ¾; Bank Stock, 169½ 8½; and Exchequer Bills, 24s. 25s. pm.—There was some [illegible] in the foreign market, in consequence of favourable intelligence from South America, which produced a demand for those securities, and Colombians were done at the improved price of 22¾ ¾; Mexican were done at 35¾; Portuguese were steady, but the Spanish market was languid.—In the share market Eastern Counties Railway Debentures were done at 1¾; Great Western, 84½; Gosport Junction, [illegible]; London and Brighton, 36¾; ditto, Loan Notes, 1¾; South Western, 60½; ditto, new, [illegible]; York and North Midland, 97¾ ex div.—Cobre Copper Mining shares, 22¾.—Colonial Bank, 26¾.—Assam Tea, 4¾.

FRIDAY.—There has been a fair amount of business done in the English funds to-day, and all descriptions of stock left off at a shade above the prices of yesterday; Consols for the Account and Money closed at 89¾ ¾; India Stock advanced to 245; [illegible] Exchequer Bills were done at 25s. 26s. pm. There was a good deal of [illegible] in the foreign market, but the business transacted did not materially affect prices, which may be taken the same as yesterday.—In the share market Eastern Counties Railways were done at 9¾; Great Western, new, 60; ditto, 85½; Brighton, 36¾ to ¾ ex loan notes; ditto, new, 3¾; Birmingham, new, 34¾; [illegible]; North Midland, 87 ex div.—Copper Mining shares were done at 22¾.—Australasian Joint Stock Bank, 51¾; Colonial, 26¾; London Bank, 23¾; London and Westminster Bank, 23¾; and National Bank of Ireland, 16¾.

A further advance took place to-day in the rates of the foreign exchanges, though the amount of business transacted was not very considerable.

The firm of Oesthaus and Busse, of Hamburgh, has suspended payment.

PROMISSORY NOTES AND BULLION.—An account of the average aggregate amount of promissory notes, payable to bearer on demand, which have been in circulation in the United Kingdom, distinguishing those circulated by the Bank of England, by private banks, and by joint-stock banks, in England and Wales, by the banks in Scotland, by the Bank of Ireland, and by all other banks in Ireland; and of the average amount of bullion in the Bank of England, during the four weeks preceding the 5th day of February, 1842:—England: Bank of England, 17,402,000l.; private banks, 5,579,374l.; joint-stock banks, 3,[illegible]l.—Scotland: Chartered, private, and joint stock banks, [illegible]l.—Ireland: Bank of Ireland, 3,[illegible]l.; private and joint stock banks, 2,[illegible]l.—Total, 34,730,421l. Bullion in the Bank of England, 5,[illegible]l. HENRY L. WICKHAM.

Stamps and Taxes, Feb. 16.

(From our own correspondents.)

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 89—3½ Stock, 98¾—Ditto New, 1830, 98¾—3½ per Cent. Debentures, [illegible]—Bank Stock, 179—Kingstown Railway, 80—Drogheda, 7—National Insurance Company, 19—City of Dublin Steam Company, 11¾—ditto Stock, 180, [illegible]—British and Irish Steam Company, [illegible]—Hibernian Bank, 30¾—Royal Bank, 10¾—Mining Company of Ireland, 14¾—Wicklow Copper Mines, 14¾.

PARIS, Feb. 17.—3 per Cents., 112f. 40c.; 4 per Cents., 102f. 50c.; 5 per Cents., [illegible]; Loan, 1841, [illegible]; Bank Actions, 3360f.; Rente de Naples, 105f. 20c.; Romans, 104¾; Spanish Actives, 24¾; ditto Passives, 5¾; Belgian 5 per Cents., 103½, 104¾; ditto, 1840, 105; ditto 3 per Cents., 72f. 50c.; Dutch 2½ per Cents., 53¾; Haytian Loan, [illegible]; St. Germain Railway, [illegible]; Versailles R. B., [illegible]; L. B., [illegible]; Rouen, [illegible]; Orleans, [illegible]; Strasburgh to Bâle, [illegible].—Exchange on London, one month, money, 25f. 40c.; three months, money, 25f. [illegible].

AMSTERDAM, Feb. 15.—Actual Debt, 2½ per Cents., 52 to ¾; 5 per Cents., 100¾ to 101¾; Amort Synd., 3½ per Cents., 77¾ to ¾; ditto, 4½ per Cents., 77 to ¾; Commercial Company, 4½ per Cents., 107¾ to 8; Loan, 1837, 3 per Cents., [illegible]. Exchange on London, 12 10; two months, 12 [illegible]; ditto on Hamburgh, 35 [illegible]; two months, 35 [illegible].

BERLIN, Feb. 5.—St. Schuld Sch., 4 per Cents., 104 3-8 to 104¾; Prussian English Bonds, 1830, 4 per Cents., 102¾. Exchange on London, three months, 6 20¾ money.

HAMBURGH, Feb. 11.—Austrian 5 per Cents., 105 money; Bank Shares, 1080 bills, 1080 money; Russian-English Loan, 115¾ bills, and 114¾ money; Five per Cent. Hamburgh Certificates, 104 bills, 103¾ money; 5 per Cents., 1st Series Inscriptions, 104 bills; ditto, Hope and Co., 5th and 6th Series, [illegible] money; ditto, in Certificates, [illegible] money; New 4 per Cents., [illegible] bills, [illegible] money; Dutch Actual Debt, 2½ per Cents., [illegible] bills, [illegible] money; Polish Bonds, [illegible] money; New Tickets, 108 money; Danish-English Loan, 3 per Cents., 7[illegible] bills, 7[illegible] money. Exchanges on London—Hamburgh, Feb. 11, 13 [illegible]; two months, 13 [illegible]; St. Petersburgh, Jan. 31, three months, [illegible]; Stockholm, Feb. 4, 75 days, 12 [illegible]; Bremen, Jan. 31, two months, 6 [illegible]; Berlin, Jan. 31, three months, 6 [illegible]; Vienna, Feb. 2, three months, 9 [illegible].

NEWCASTLE, Thursday.—Since last week there has been rather more demand for Great North of England Railway shares, and the price a little higher. Little or no change in other stocks.—North of England Joint Stock Bank, [illegible]; Northumberland and Durham District, [illegible]; Newcastle, Shields, and Sunderland Union, [illegible]; Newcastle-upon-Tyne Joint-Stock, [illegible]; Newcastle Commercial, [illegible]; Sunderland Joint Stock, [illegible]; Darlington District, [illegible]; Carlisle City and District, [illegible]; Cumberland Union, [illegible]; Stockton and Durham County, [illegible].—Newcastle and Carlisle Railway, [illegible]; Newcastle and North Shields, [illegible]; Brandling Junction, [illegible]; Durham and Sunderland, [illegible]; Clarence, [illegible]; Hartlepool and Stockton, [illegible]; Hartlepool Dock and Railway, [illegible]; Great North of England, [illegible].—Newcastle Union Shipping Company, [illegible]; Port of Newcastle, [illegible]; London, Newcastle, and South Shields, [illegible]; Gateshead and Tyne, [illegible].—North and South Shields Steam Ferry, [illegible].—Newcastle Subscription Water Company, [illegible].—Newcastle and Gateshead Union Gas Company, [illegible].—Durham County Coal Company, [illegible].

HULL, Thursday.—The periodical meetings of the various companies, together with the financial and commercial questions now pending, have combined to render the past week a dull one in shares.—Birmingham and Derby Railway, [illegible]; Birmingham and Gloucester, [illegible]; Grand Junction, [illegible]; Great North of England, [illegible]; Great Western, [illegible]; Hull and Selby, [illegible]; Leeds and Selby, [illegible]; Liverpool and Manchester, [illegible]; London and Birmingham, [illegible]; London and Brighton, [illegible]; London and South-Western, [illegible]; Manchester and Birmingham, [illegible]; Manchester and Leeds, [illegible]; Midland Counties, [illegible]; North Midland, [illegible]; South Eastern and Dover, [illegible]; York and North Midland, [illegible]; Edinburgh and Glasgow, [illegible]; Sheffield and Rotherham, [illegible].—York City and County Bank, [illegible]; Yorkshire District, [illegible]; Hull, [illegible]; Yorkshire Agricultural, [illegible]; Smithfield Joint-stock, [illegible].—Hull Dock Company, [illegible].—Hull Gas Works, [illegible].—Hull Flax and Cotton Mills, [illegible].—Hull Marine Insurance Company, [illegible].

EDINBURGH, Wednesday.—Edinburgh and Glasgow Railway, [illegible]; Dalkeith and Edinburgh, [illegible]; Glasgow and Greenock, [illegible]; Glasgow and Garnkirk, [illegible]; Glasgow and Ayrshire, [illegible]; Wishaw and Coltness, [illegible]; Dundee and Arbroath, [illegible]; Arbroath and Forfar, [illegible].

LEEDS, Thursday.—The share market during the past week has been very inanimate, with a tendency to decline, the necessary consequence of the present agitated state of the country, and the uncertainty of what is to be the reform in our commercial code. North Midlands are dull at 7[illegible]l.; Manchester and Leeds freely offering at 4l. to 5l. pm.; Hull and Selbys steady at about 40l.; and Sheffield and Rotherhams in great demand at 23¾l. to 23¾l.; York and North Midlands have fallen full 2l. per share.—North Midland Railway, 7[illegible]l.; York and North Midland, 96l.; Leeds and Selby, 87¾l.; Hull and Selby, 40l.; Great North of England, 9[illegible]l.; Manchester and Leeds, 74l.; Sheffield and Rotherham, 23¾l.—Leeds Banking Company, 18; Leeds and West Riding, 9[illegible]l.; Leeds Commercial, 3¾l.; Yorkshire District, 9l.; Yorkshire Agricultural and Commercial, 5¾l.; York City and County, 29l.; York Union, 16¾l.—Leeds and Liverpool Canal, 73[illegible]l.; Barnsley, 24[illegible]l.; Huddersfield, 2[illegible]l.; Rochdale, 7[illegible]l.—Leeds and Yorkshire Assurance Company, 1[illegible]l.—Leeds Old Gas Company, 22[illegible]l.; Leeds New Gas Company, 37l.—Leeds Commercial Buildings, 24l. R. B. WATSON & Co.

GLASGOW, Feb. 15.—The transactions in bank shares have been to a limited extent. Glasgow Union has declined to 8[illegible]l.; City of Glasgow to 8l. 12s.; and Clydesdale is offered at 12¾l. A meeting of the proprietors of the Glasgow Joint-Stock Bank took place on the 2d inst., when, notwithstanding the pressure of the times, a profit of 18,00[illegible]l., after defraying the expense of forming the company, was shown to have been realised on the business of the bank for the first year. The stock has since been inquired for, and sales made at ¾ pm.—The shares of insurance companies remain much the same.—Meetings of the shareholders of the Ballochney, Monkland and Kirkintilloch, and Wishaw and Coltness Railways have been held during the month. A large increase of traffic has been shown to have taken place on each during the last year, and the revenues appear to be still steadily on the advance. The dividend for the half-year on the Ballochney Railway has been raised to 2¾l., and the shares have advanced from 80l. to 87¾l.; Monkland and Kirkintilloch, which was done in the early part of the month at 5[illegible]l., has advanced to 58l.; Wishaw is scarce at the quotation. The annual meeting of the Garnkirk takes place on the 14th inst., when it is understood a dividend of 2l. per share will be declared. Edinburgh and Glasgow has fluctuated from 3l. to 5l. discount, and Ayrshire has improved 1l. per share.

Ballochney Railway, 87¾l.; Dundee and Arbroath, 22¾l.; Edinburgh and Glasgow, 45¾l.; Garnkirk and Glasgow, 40l.; Glasgow and Greenock, 22¾l.; Glasgow, Paisley, Kilmarnock, and Ayr, 36l.; Monkland and Kirkintilloch, 58l.; Slamannan, 25l. Wishaw and Coltness, 40l.

BRISTOL, Friday.—Nothing can exceed the dullness of our market; we have literally nothing doing, and prices lower than my last.—Great Western Railways, 84l. to 85l.; halves, 59¾l. to 60l.; fifths, 8¾l. to 9l.; Bristol and Exeter, 36l. to 36¾l.; Bristol and Gloucester, 3l. to 5l.; Birmingham and Gloucester, 63l. to 63l.; Cheltenham Union, [illegible]l. to 15¾l.; Taff Vale, 65l.—Bristol Gas Company, 32l.; Clifton, 23l. to 25l.

LIVERPOOL, Thursday.—Grand Junction Railway, 184l. ex div.; Lancaster and Preston, 35l.; Liverpool and Manchester, 191l. ex div.; North Union, 7[illegible]l.; Paris and Rouen, 14¾l.; York and North Midland, 96l.—Albion Bank, 25¾l.; Borough, 13¾l. ex div.; Bank of Liverpool, 1[illegible]l. ex div.; Liverpool Banking Company, 7¾l.; Manchester and Liverpool District, 10¾l.; North and South Wales, 4¾l.; Royal, 67¾l. ex div.; South Lancashire, 4¾l.; Union, 10¾l. ex div.

MANCHESTER, Thursday.—Manchester and Birmingham Railway, 28¾l.; Manchester, Bolton, and Bury, 31¾l.; Manchester and Leeds, 73l.—Bank of Manchester, 4¾l.; Stockport, 2¾l.; Manchester and Liverpool District, 10¾l.; Manchester and Salford, 10l.; South Lancashire, 4¾l.; Union of Manchester, 6¾l.—Manchester Fire and Life Assurance Company, 2¾l.—Union Plate Glass Company, 6¾l.

BIRMINGHAM, Thursday.—London and Birmingham Railway, 167l. to 168l.; Great Western, 85l. to 86l.; London and South-Western, 59¾l. to 60l.; London and Brighton, 36¾l. to 36¾l.; Birmingham and Derby, 57l. to 59l.; Birmingham and Gloucester, 61l. to 63l.—Birmingham Banking Company, 2[illegible]l. to 2[illegible]l.; Birmingham and Midland, 31l. to 32l.; Birmingham and Staffordshire, 7¾l. to 7[illegible]l.

SALE OF COPPER ORES IN CORNWALL.

Sampled Feb. 2, and Sold at Andrews's Hotel, Redruth, Feb. 17.

Mines.	Tons.	Price.	Purchasers.	Mines.	Tons.	Price.	Purchasers.
Tresavean	130	£7 [illegible]	Williams.	Fowey C.	[illegible]	£7 [illegible]	Vivians.
ditto	102	5 7 6	ditto	ditto	[illegible]	7 20 0	Williams.
ditto	92	5 5 6	Vivians.	Holmbush	57	9 1 0	Freemans.
ditto	90	5 12 6	Freemans.	ditto	37	9 3 6	P. Grenfells.
ditto	70	4 11 6	Williams.	ditto	[illegible]	9 12 0	Freemans.
ditto	[illegible]	[illegible]	ditto	ditto	[illegible]	[illegible]	Freemans.
ditto	23	4 11 6	Freemans.	W. Gorland	31	7 16 0	Nevill & Co.
ditto	25	4 11 6	Nevill & Co.	ditto	24	6 1 0	ditto
ditto	23	[illegible]	Freemans.	Tregolian	37	4 16 6	Vivians.
Fowey C.	[illegible]	[illegible]	Freemans.	ditto	17	4 16 6	Williams.
ditto	[illegible]	[illegible]	Williams.				
ditto	[illegible]	[illegible]	Vivians.				
ditto	47	5 16 6	Vivians.				

TOTAL PRODUCE.

Tresavean	577	£3186 2 6	Wh. Gorland	55	£385 16 0
Fowey Consols	232	1615 18 0	Tregolian	54	260 11 0
Holmbush	169	1647 2 0			

Average standard, 116l. 15s.—Average produce, 7¾.—Average price, 6l. 3s. 6d.—Quantity of ore, 1141 tons.—Quantity of fine copper, 88 tons 3 cwt.—Amount of money, 7086l. 7s. 6d.—Average standard of last sale, 121l. 2s.—Average produce, 7¾.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Vivian and Sons	240	1443 12 6
Freeman and Co.	[illegible]	[illegible]
Grenfell and Sons	37	336 14 0
Sims, Willyams, Nevill, Druce, and Co.	115	828 13 4
Williams, Foster, and Co.	443	2748 3 6
Total	1141	£7,086 7 6

Copper ores for sale on Thursday next, at Pascoe's Hotel, Truro.—Mines and Parcels.—United Mines, [illegible]; Tretheliau, [illegible]; North Downs, [illegible]; Hallenbeagle, 293; Fowey Consols, 260; Tresavean, 172; Consolidated Mines, 146; Charlestown United Mines, 174; Great Wheal Charlotte, 179; Cregy Brews, 109; Wheal Vyvyan, 73; Langer and Co.'s Ore, 19; Wheal Kerton, 6.—Total, 2211 tons.

Copper ores for sale on Thursday week, at Seryell's, Pool.—Mines and Parcels.—North Roskear, 810; Consolidated Mines, 680; United Hills, 308; East Wheal Crofty, 304; Dolcoath, 209; Fowey Consols, 257; East Pool, 221; South Roskear, &c., 220; South Wheal Basset, 217; Wheal Harriet, 75; Williams's East Downs, 61; Wheal Sparrow, 14.—Total, 3204 tons.

COPPER ORES SOLD BY PRIVATE CONTRACT.

Mines.	Tons.	Price.	Purchasers.
South Caradon	142	£7 10 6	Williams, Foster, and Co.
Ditto	79	7 16 6	ditto.
Ditto	55	7 4 0	ditto.
Ditto	54	6 8 6	ditto.

SALES OF BLACK TIN,

By Ticket, on the 15th of February, at Truro.

Mines.	Tons.	Price.	Amount.	Purchasers.
Charlestown	16	£38 0 0	£614 0 0	Bolithos and Co.
ditto	16	38 0 0	614 0 0	Williams and Co.
ditto	[illegible]	37 12 6	239 17 3	Bolithos and Co.
ditto	[illegible]	37 12 6	239 17 3	Williams and Co.
ditto	[illegible]	39 10 0	110 12 6	Bolithos and Co.
ditto	[illegible]	39 0 0	73 10 0	Williams and Co.
ditto	[illegible]	38 0 0	91 0 0	ditto.
ditto	[illegible]	39 12 6	614 3 0	Bolithos and Co.
ditto	[illegible]	39 12 6	614 3 0	Williams and Co.
ditto	17	37 3 6	643 10 0	ditto.
ditto	[illegible]	36 10 0	299 15 0	Bolithos and Co.
ditto	[illegible]	35 10 0	71 0 0	ditto.
ditto	[illegible]	39 3 6	88 0 0	ditto.
Bodmin	6	40 10 0	243 0 0	ditto.
ditto	6	40 10 0	243 0 0	Williams and Co.
ditto	17	38 10 0	654 10 0	L. C. & W. Daubuz
ditto	[illegible]	32 3 0	96 15 0	Bolithos and Co.
Bodmin [illegible]	7	37 12 6	272 15 7	ditto.
ditto	7	37 12 6	272 15 7	Williams and Co.
ditto	[illegible]	11 3 6	16 5 0	Bolithos and Co.
Polgooth	2	38 3 0	96 2 6	L. C. & W. Daubuz
ditto	[illegible]	38 3 0	19 16 1	Bolithos and Co.
ditto	[illegible]	38 3 0	19 16 1	Williams and Co.
Garrigans	[illegible]	45 12 6	136 17 6	L. C. & W. Daubuz

Total tons, 161.—Amount, £6079 3 7.

SALE OF COPPER ORES AT SWANSEA.

Copper ores for sale Feb. 22.—Cobre 117, ditto 113, ditto 94, ditto 86, ditto 58, ditto 101, ditto 80, ditto 71, ditto 75, ditto 55, ditto 90, ditto 61, ditto 72, ditto 48, ditto 100, ditto 90, ditto 41, ditto 40, ditto 84, ditto 63, ditto 53, ditto 11—Knockmahon 111, ditto 102, ditto 101, ditto 87, ditto 60, ditto 37, ditto 20—Santiago 111, ditto 28, ditto 93, ditto 92, ditto 37—Allihies 112, ditto 1 0—Palatine 22—Chili 70—Laxey 32—Lackamore 42—Holme Stag 12, ditto 2—Spyon 29, ditto 6.—Total, 2240 tons.

PRICES OF MATERIALS IN CORNWALL

AS SUPPLIED AT THE PRINCIPAL MINES IN THE FOLLOWING MONTHS.

	9 & 10		11 & 12			9 & 10		11 & 12	
Common iron, per cwt.	7s	9d	7s	9d	Iron-wire sieves, each	2s	6d	2s	2d
Half-inch square ditto	8	0	8	0	Iron-wire work, per foot	[illegible]	[illegible]	[illegible]	[illegible]
Best tough white chain	20	0	20	0	Board nails, per cwt.	17	0	17	0
Boiler plates	12	0	12	0	Wall-headed ditto, per 1000	[illegible]	[illegible]	[illegible]	[illegible]
Hoop iron	11	0	11	0	Hatch ditto	[illegible]	[illegible]	[illegible]	[illegible]
Nail-iron	[illegible]	[illegible]	[illegible]	[illegible]	Half-hatch ditto	[illegible]	[illegible]	[illegible]	[illegible]
Miners' shovels	30	0	30	0	Linseed oil, per gallon	[illegible]	[illegible]	[illegible]	[illegible]
Charcoal iron	14	0	14	0	Rape ditto	3	10	3	10
Gunpowder, per 100 lbs.	40	0	40	0	Hemp, per fath.	[illegible]	[illegible]	[illegible]	[illegible]
Lu-chain, per lb.	1	10	1	10	Fuse	[illegible]	[illegible]	[illegible]	[illegible]
Coals, per ton, at coast	11	0	11	0	Sheet lead, per cwt.	24	0	24	0
Candles, per dozen lbs.	[illegible]	[illegible]	[illegible]	[illegible]	Sagrow heads	11	6	11	6
Tallow, per cwt.	63	0	61	0	50 ½ steel (112 lbs.)	[illegible]	[illegible]	[illegible]	[illegible]
Ropes	[illegible]	[illegible]	[illegible]	[illegible]	Do. nails	[illegible]	[illegible]	[illegible]	[illegible]
Tub ropes	40	0	40	0	Pick hilts	[illegible]	[illegible]	[illegible]	[illegible]
Staves	[illegible]	[illegible]	[illegible]	[illegible]	Shovel hilts	[illegible]	[illegible]	[illegible]	[illegible]
White yarn, per cwt.	54	0	54	0	White ground lead	[illegible]	[illegible]	[illegible]	[illegible]
White rope	58	0	58	0	Red lead	[illegible]	[illegible]	[illegible]	[illegible]
Brass wire sieves, each	[illegible]	[illegible]	[illegible]	[illegible]	Bar[illegible] iron	[illegible]	[illegible]	[illegible]	[illegible]
Ditto ...	[illegible]	[illegible]	[illegible]	[illegible]	Blister steel	[illegible]	[illegible]	[illegible]	[illegible]

*** The figures at the top of the columns refer to month: 1—as 1 Jan., 2 Feb., &c.

LATEST CURRENT PRICES OF METALS.

LONDON, FEBRUARY 18, 1842.

	£ s. d.		£ s. d.
Iron, Eng.—Bar ... ton	6 15 0	Copper—Foreign ... (dy. 27s.)	[illegible]
Do. Carg. in Wales ... ton	[illegible]	Tin, Brit.—Blocks ... cwt	[illegible]
Hoops ... ton	[illegible]	Bars ...	[illegible]
Sheets ... ton	[illegible]	Banca ...	[illegible]
Pig, No. 1 ... ton	[illegible]	Straits ...	[illegible]
Do. in Wales ... ton	[illegible]	Tin Plates—I.C. (box)	[illegible]
Foreign—Swedes ... ton	[illegible]	I.X. do.	[illegible]
Russian ccnd. ... ton	[illegible]	(Others in proportion.)	
Duty 30s. per ton ... ton	[illegible]	Lead, Brit.—Pig ... ton	[illegible]
c.c.n.d. ... ton	[illegible]	Sheet ... ton	[illegible]
Steel, Eng. Blistered	[illegible]	Shot ... ton	[illegible]
Shear do. ...	[illegible]	Red ... ton	[illegible]
Cast do. ...	[illegible]	White (dry) ... ton	[illegible]
Foreign—Swedes in kgs ...	[illegible]	Do. (gd. in oil) ... ton	[illegible]
Do. Faggots ...	[illegible]	Foreign—Span. (dy. dts.)	[illegible]
Duty 20 per cent. Milan ...	[illegible]	Spelter ...	[illegible]
Copper, Brit.—Cake ... ton	[illegible]	For delivery ...	[illegible]
Tile ...	[illegible]	English Sheets ...	[illegible]
Sheets ... lb.	[illegible]	Quicksilver ... (dy. 1d. per lb.)	[illegible]

REMARKS.—The metal markets continue extremely dull. In lead large business has been done for France at reduced prices—[illegible] per fodder in Newcastle. Some business has also been done in spelter for India; and about 100 more tons of tin have been sold this week by the Miners' Company, at 65s. 6d. blocks, and 67s. bars, net.

EXPORTATION OF GOLD AND SILVER.—By the official return published by the Customs, the export of the precious metals from the port of London to foreign and colonial ports, for the week ending Thursday last, was as under:—

Silver coin to Belgium	12,000	ounces.
" " Calais	219,000	"
" " Mauritius	31,484	"
Silver bars to Calais	10,000	"

The quantity of silver coin and bullion shipped at Dover in the month of January for Calais amounted to 449,456 oz.

EXPORTATION OF BRITISH AND FOREIGN METALS from the ports of London and Liverpool, for the month ending January 31, 1842:—

	British.	Foreign.	Total.
Iron ... tons	10,267	290	10,557
Steel	212	204	416
Copper	11	219	230
Do. sheets	261	—	261
Tin	76	79	155
Do. plates ... boxes	18,800	—	18,800
Lead ... tons	508	46	554
Spelter	—	74	74
Quicksilver ... lbs.	—	267,880	267,880

COMPARATIVE STATEMENT OF METALS EXPORTED from London and Liverpool to India and China, from 1st January to 31st December, 1840 and 1841:—

	Bombay. 1840.	Bombay. 1841.	Calcutta & Madras. 1840.	Calcutta & Madras. 1841.	China, Batavia, Singapore, &c. 1840.	China, Batavia, Singapore, &c. 1841.
Quicksilver ... bottles	905	300	1400	1060	—	—
Spelter ... tons	790	265	2025	730	—	—
Cop., tough cake & tile, Br.	290	110	102	60	—	—
" yellow metal	59	125	190	150	—	—
" sheathing, &c.	782	957	1549	1430	318	174
Iron, British	9210	14822	14108	15340	4603	6240
" Swedish	1100	1110	1452	604	355	35
Steel, Swedish	305	650	120	200	60	80
Lead, British	634	510	1000	590	890	1070
" Spanish	[illegible]	—	—	—	—	—
Tin plates ... boxes	1465	2410	4880	6320	2773	2845

COAL MARKET LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Bell Robson's Hartley 17 6—Buddle's West Hartley 18 6—Old Tanfield 16 0—Ord's Redheugh 16—West Hartley 19—Wylam 17 9—Wall's End Clennell 18—Killingworth 19—Perkins 17 9—Todd's Bensham 18 6—South Killingworth 18 6—Bradyll's Hetton 21—Haswell 21—Hetton 21—Lambton 21—Stewart's 21 6—Whitwell 19 9—Hartlepool 21—Kelloe 21 3—Tennant's Hartlepool 20—Richardson's Tees 19 6—Blyth 15 6—Hartley 17 3—Wallsend 17—Wooburgh Park 17.—Ships arrived, 50.

WEDNESDAY.—Adair's Main 16—Carr's Hartley 18 6—Chester Main, 17 3—West Wylam 17 6—Wall's End Elm Park 18 6—Killingworth 19 9—Newcastle 17 3—Northumberland 18—South Killingworth 16—East Hetton 19—Haswell 21—Hetton, 21—Lambton 20 6—Stewart's 21 3—Caradoc 21 3—Brown's Deanery 20—South Durham 19 3—Blyth 15 6.—Ships arrived, 21.

FRIDAY.—Adair's Main 15 9—Buddle's West Hartley 18—Carr's Hartley, 18 6—Chester Main 17 3—East Wylam 18—New Tanfield 18—Tanfield Moor 20—Wylam 17 9—Wall's End Clarke and Co. 17—Killingworth 18 9—Northumberland 18—Riddell's 19—South Killingworth 15 9—Bradyll's Hetton 21—Hetton 20 9—Lambton 20 6—Stewart's 21—Whitwell 19 9—Caradoc 21 3—Cassop 21—Hough Hall 21—Bowburn 18 6—Coundon Tees 18—Blyth 15 3—Howard's Netherton Main 17 6.—Ships arrived, 88.

PRICES OF MINING SHARES.

Shares.	BRITISH MINES.	Paid.	Price.	Shares.	BRITISH MINES.	Paid.	Price.
500	Anglesey	5	—	6,000	Tin Croft	[illegible]	[illegible]
4,000	Bissoe Bridge	[illegible]	[illegible]	4,500	Tretoil	[illegible]	[illegible]
10,000	British Iron	[illegible]	[illegible]	1,000	Trevisgia	[illegible]	[illegible]
5,000	Blaenavon	[illegible]	[illegible]	4,000	Trewerthen and Barrier	[illegible]	[illegible]
120	Brewer	—	[illegible]	96	Tresavean	—	[illegible]
79	Bodmin	—	[illegible]	96	Tretheliau	—	[illegible]
1,000	Carn Brea	[illegible]	[illegible]	4,000	United Hills	[illegible]	[illegible]
2,000	Cornubian Lead Co.	3	4¾	6,000	Wicklow Copper	5	13
6,000	Cornwall Great United	10¾	¾	3,945	West Wheal Jewel	9	4¾
	Cuddra	10	¾	1,000	Wheal Julia	—	6¾
512	Cook's Kitchen	—	30	128	Wheal Kitty	—	60
112	Charlestown	—	300		FOREIGN MINES.		
1,000	Dartmoor Consols	3	14	5,000	Alten Mining Company	12¾	8
10,000	Durham County Coal Co.	37	9	10,000	Anglo Mexican Co.	100	¾
2,800	Dannescombe	—	2	5,374	Do. Subscription	25	1
6,000	De Dunstanville	—	—	2,000	Bolanos	150	5
1,000	Duffield	20	11		Ditto Scrip	15	6¾
200	Diamond	3¾	10	10,000	Brazilian Imperial	20	9
1,200	East Mulberry Hills	3¾	1	10,000	Bolivar	20	¾
256	East Pool	—	420	10,000	Ditto Scrip	10	2
4,000	East Tretoil	1	¾	10,000	Cata Branca } Brazilian Co.	6¾	7¾
5,200	Great Wh. Prosper	7¾	6¾	10,000	Concecao }	4	—
14,000	Great Wh. Charlotte	3	1¾	12,000	Cobre Copper Company	40	22¾
10,000	Hibernian	12¾	2¾	8,500	Colombian Co. regis.	55	2
1,000	Holmbush	14	30	10,000	Copiapo Mining Co.	12¾	9
2,000	Isle of Sark (Guernsey)	1¾	2¾	20,000	General Mining Asso.	15	2
20,000	Mining Co. of Ireland	7	12¾	5,351	Mexican Company	30	2
6,000	Polbreen	4	1	12,000	Mocambao and Cocaes	23	4¾
3,000	Polberrow Consols	10	¾	14,302	{ Real del Monte, regis.	42¾	7¾
2,000	Reliston	—	¾		{ Do. unregistered	—	3
5,000	Redmoor Consolidated	3	1¾		Ditto Loan Notes	140	16
10,000	Rhymney Iron	50	18	7,000	Royal Santiago	10	17¾
100	Roswall Hill	100	170	11,000	St. John d'el Rey	14¾	2
800	South Towan	10	1	20,000	United Mexican	40	¾
4,000	Tregolian	4¾	¾		Black Scrip, add. capital	5	1¾
4,000	Treleigh Consols	4¾	3¾		Red New Scrip	5	3¾
4,100	Tamar Consols	3	1¾				

RAILWAY SHARE LIST AND TRAFFIC RETURNS.

Line.	Entire Lgth.	Now Open.	Present actual cost.	Pd. on Share.	Val. of Share.	Last week's Returns.
Arbroath and Forfar Railway	15	15	£ 131,[illegible]	25	22	£[illegible]
Birmingham & Derby Junc.	48	38¾	950,044	100	59 6	1001 14 6
Birmingham and Gloucester	53¾	51	1,013,725	100	63¾	1202 18 0
Brandling Junction	25	25	457,[illegible]	45	—	300 17 0
Chester and Birkenhead	14¾	14¾	456,044	50	30	310 11 1
Dublin and Kingstown	6	6	355,200	100	27¾	480 13 7
Dundee and Arbroath	16¾	16¾	114,904	25	25	147 3 9
Eastern Counties*	126¾	17¾	1,476,170	25	9 8¾	646 3 7
Glasgow and Ayr	51	40	650,341	40	40	674 16 1
Glasgow and Paisley Joint	22¾	22¾	209,000	25	26	373 13 0
Gd. Junc. & Chester & Crewe	113¾	113¾	2,182,047	100	181 90	6400 14 0
Great North of England	75	45	1,000,000	100	89	1541 10 0
Great Western	118	118	5,290,044	65	85¾	9041 4 0
Hull and Selby	31	31	400,000	50	39¾	720 10 0
Lancaster & Preston Junc.	20¾	20¾	300,000	42¾	37¾	397 8 10
Liverpool and Manchester	31	31	1,419,000	100	190¾	4188 13 3
London and Birmingham	112¾	112¾	5,724,667	90	170	13,000 7 3
London and Blackwall	3¾	3¾	867,000	25	11¾	500 1 0
London and Brighton	47¾	47¾	} 2,000,000	40	36 ¾ {	1300 12 1
Ditto Shoreham Branch	5¾	5¾				75 6 0
London and Croydon	10¾	10¾	537,000	13	11¾ ¾	300 0 0
London and Greenwich	3¾	3¾	750,000	20	4¾	760 11 10
London and South Western	95	77	2,200,667	50¾	60 ¾	4730 10 0
Manchester, Bolton, & Bury	10	10	770,000	80	46	480 15 0
Manchester & Birmingham	46	8	1,196,812	40	28¾ ¾	402 18 10
Manchester and Leeds	60	50	2,935,309	70	73¾	3001 11 0
Midland Counties	57	57	1,650,298	100	62 ¾	2870 3 0
Newcastle and Carlisle	60¾	60¾	750,000	100	90	1504 10 0
Newcastle and N. Shields	7	7	253,457	50	44	320 3 0
Northern and Eastern†	32¾	14¾	280,000	40	32¾	730 12 0
North Midland	72¾	72¾	3,020,297	100	75	2600 4 0
North Union	23	23	500,000	75	73¾	542 7 0
Preston and Wyre	19¾	19¾	275,000	50	50	149 7 11
Sheffield and Manchester	40	7	[illegible]	50¾	—	316 3 11
Ulster	25	8	230,345	22¾	—	—
York and North Midland	25	25	440,000	50	97 ¾	1400 13 3

* Including Northern and Eastern Railway toll. † Rent and toll to Eastern Counties (about 150l. per week) included in the returns. ‡ The Liverpool and Manchester toll is deducted.

[For "London Gazette" and "Meteorological Journal" see 4th page.]

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